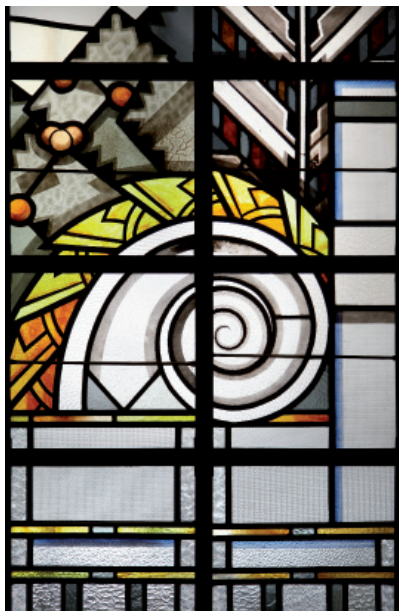
The countercyclical provisions of the Banco de España 2000-2016



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BANCO DE ESPAÑA
Eurosistema

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Detail of stained glass window in the banking hall of the headquarters of the Banco de España
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“Do not make many rules, and if you do, try to make them good, and above all, make sure they are followed; for if rules are not followed, it is as if they did not exist.”

Don Quixote, Part II

Miguel de Cervantes, 1615

ABBREVIATIONS

BCBS:	Basel Committee on Banking Supervision
BIS:	Bank for International Settlements
CBE:	*Circular del Banco de España* (Banco de España Circular)
CCB:	Capital conservation buffer
CCR:	Spanish Central Credit Register
CCyB:	Countercyclical capital buffer
CDS:	Credit default swaps
CEBS:	Committee of European Banking Supervisors
CECL:	Current expected credit loss
CEIOPS:	Committee of European Insurance and Occupational Pensions Supervisors
CEMFI	*Centro de Estudios Monetarios y Financieros*
CEO:	Chief executive officer
CEPR:	Centre for Economic Policy Research
CET1:	Common Equity Tier 1
CGFS:	Committee on the Global Financial System
CNMV:	*Comisión Nacional del Mercado de Valores* (Spanish National Securities Market Commission)
CRD:	Capital Requirements Directive
CSFI:	Centre for the Study of Financial Innovation
DSGE:	Dynamic stochastic general equilibrium
DTI:	Debt-to-income
EAD:	Exposure at default
EBA:	European Banking Authority
ECB:	European Central Bank
ECL:	Expected credit loss
EEC:	European Economic Community
EU:	European Union
FASB:	Financial Accounting Standards Board
FLESB:	Forward-looking exercise on Spanish banks
FRB:	Federal Reserve Board
FSA:	Financial Services Authority
FSB:	Financial Stability Board
FSF:	Financial Stability Forum
FSI:	Financial Stability Institute
G10	Group of Ten
G20	Group of Twenty
GDP:	Gross domestic product
IAS:	International Accounting Standards
IASB:	International Accounting Standards Board
IESE:	*Instituto de Estudios Superiores de la Empresa* (IESE Business School)
IFRS:	International Financial Reporting Standards
IMF:	International Monetary Fund
IRS:	Internal Revenue Service
LGD:	Loss given default
LIP:	Loss identification period
LSE:	London School of Economics
LTV:	Loan-to-value
MoU:	Memorandum of Understanding
NPLs:	Non-performing loans
OCC:	Office of the Comptroller of the Currency
OECD:	Organisation for Economic Co-operation and Development
PD:	Probability of default
PIT:	Point-in-time
P&L:	Profit and loss
RWAs:	Risk-weighted assets
SEC:	Securities and Exchange Commission
SSM:	Single Supervisory Mechanism
TTC:	Through-the-cycle
UK:	United Kingdom
US:	United States
US GAAP:	US Generally Accepted Accounting Principles

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Foreword

Luis M. Linde
Governor of the Banco de España

In the late 1990s the Banco de España became, quite unintentionally, a major player on the banking supervisory/regulatory stage as a result of the introduction of a new feature in the regulatory framework, namely countercyclical credit risk provisions, initially called statistical provisions, designed to cover the expected loss arising from credit risk over a full economic cycle. No other European banking supervisor adopted them, although in the insurance world the logic behind them was being routinely applied in the form of risk coverage recorded from the start of every insurance transaction.

The countercyclical mechanism of these provisions meant that they accumulated in economic upturns and were released in downturns, cushioning the impact of the economic cycle on banks' income statements and solvency ratios. This gave banks the means to refrain from further reducing credit in downswings and, therefore, helped to limit the deepening of the crisis. Countercyclical provisions thus had a macroprudential dimension which attracted the interest of international regulators and supervisors from the very beginning.

This book tells the story of countercyclical provisions and the theoretical and empirical elements on which they were based; the environment, at times rather hostile, both inside and outside Spain, in which they were developed and evolved; the regulatory policy needs they sought to meet; and the interest they awakened abroad, first among banking regulation experts and later among international authorities when it came to defining the new regulatory and accounting framework to be applied to banks following the international financial crisis.

In short, the book narrates the main contribution made by the Banco de España to the international regulatory and supervisory world in the last two decades, from both a conceptual and implementation standpoint. It is gratifying to see that international banking regulation has recently incorporated a countercyclical capital buffer and that, at the same time, the accounting authorities are set to change their criterion for recognising asset impairment from incurred loss to expected loss. These two elements certainly form part of the essence of the Spanish countercyclical provisions. Accordingly, it does not seem unjustified to consider that

the tool created by the Banco de España nearly two decades ago may have inspired the inclusion of the new countercyclical buffers in the regulatory framework that emerged in the wake of the international financial crisis that began in 2007. Like the Banco de España's countercyclical provisions, the new countercyclical buffers aim to strengthen the future stability of the financial system.

Finally, I wish to thank all those who, in these nearly twenty years, have been involved in the creation, modification and development of countercyclical provisions. Since it would take too long to mention everyone who played a part, however large or small, in that work nearly two decades ago, I will mention only Raimundo Poveda, the head of banking regulation at the Banco de España when countercyclical provisions were created in the second half of the 1990s and one of the main driving forces behind the initial proposal. And, of course, my deepest thanks on behalf of the Banco de España go to the two authors, Jesús Saurina and Carlos Trucharte, who devoted great effort and much of their spare time in 2015 and 2016 to preparing and writing this book. The result is a magnificent work which will surely become a key reference on the subject.

For Ana and Almudena,
and also for Nora, Pablo, Jorge and Jesús,
and for María, Cristina and Carlos,
for the time stolen, never to be recovered.

Acknowledgements

When Governor Linde suggested that we write a book about Spanish countercyclical provisions, our immediate response was a wary one. Both of us had already written a great deal about statistical or dynamic provisions, two other names by which countercyclical provisions are also known. We had written articles — separately, jointly and with other authors — about their functioning, impact, usefulness, etc., and we knew how much effort writing a book involves, especially given our professional and family responsibilities. But, in the end, we were convinced to embark on this adventure thanks to Governor Linde's persuasive insistence.

Now that the book is finished, and despite the time we devoted to it during our Christmas holidays in 2015 and the summer holidays, long weekends and bank holidays in 2016, we indeed feel gratitude to Governor Linde for the task he set us. Gratitude for giving us the opportunity to explain and review what has probably been the Banco de España's greatest intellectual contribution to the international debate of the last two decades. Gratitude also for his unfailing interest and support throughout the writing of this book and for suggesting that we publish it in English, as well as Spanish, to widen its audience and reach.

Our very special thanks also go to three very demanding readers (perhaps best described as referees) for their comments and suggestions, which have enabled us to greatly improve the rigour, clarity and scope of the book. First, Raimundo Poveda, who played a key role in creating the countercyclical provisions. He also shared all his wisdom to help us explain them, not only in their past context, but also with a view to the future, given the changes in the accounting doctrine that have recently taken place and which he had long yearned for. Second, Rafael Repullo, as demanding as when we had the fortune of being taught by him some years ago at the CEMFI. Not only is he an affectionate and extraordinary teacher, he also helped us to put a great deal more care into the analysis and writing of the book. And third, Vicente Salas, who with great respect, and with his personal and intellectual modesty and analytical powers, made us rethink several sections of the book containing conceptual errors or unsubstantiated analysis. All three provided an invaluable contribution, improving the quality of the book very significantly. It goes without saying that none of them are responsible for any errors that may remain or for the opinions expressed, especially as we have not always accepted their suggestions.

We were also hoping to have a fourth examiner, a person with a profound understanding of the intricacies of the process of gestation of the countercyclical provisions (and of so many other things), and an extraordinarily skilled critical reader of any text written at the Banco de España. Sadly, Miguel Pellicer passed away before we were able to finish the book and benefit from his disinterested help. We would like to express here our gratitude and recognition of his quiet and effective work over so many years.

Emiliano González Mota, at the very beginning, and Fernando Restoy, at the very end, provided us with many constructive comments, most of which have been incorporated into the text and have helped to better explain the countercyclical provisions and how they have evolved over time.

We wish to thank all our past and present colleagues of the Financial Stability Department for their support, day-to-day collaboration, conceptual discussions, rigorous analytical processing of the data and thorough empirical research, and for so many days of effective work and frank debate and disagreement. The story told by this book would be substantially different without the contributions of Daniel Pérez and Gabriel Jiménez, with whom we have written about countercyclical provisions and so many other subjects in the distant and recent past. Nor can we forget to thank María Luisa Leyva for her diligent editorial work and stylistic revision, and her tireless examination of the text and proofs, in both Spanish and English. Without her valuable contribution, this book, starting with the cover, would not have been the same.

We also extend our thanks to other colleagues at the Banco de España, from other departments and directorates, with whom we have worked in the past on countercyclical provisions, regardless of the magnitude of the conceptual or practical discrepancies we may have had, since we have always learnt from them. Special mention should be made of our copy editor and other colleagues in the Publications department, and of the English translators, whose patience we have tested on numerous occasions.

Last, but not least, we would like to thank our respective families for all their support during the process of creating this book. Without them, nothing would have been the same. We thank them for their understanding and enormous patience on countless occasions during the long time, much of it “family” time, we took to write this book.

Madrid, 30 January 2017.

Introduction

The countercyclical provisions[1] established by the Banco de España in 1999, in force between July 2000 and September 2016, have aroused interest, debate and even controversy among bankers, regulators, supervisors and academics. It is difficult to find in the field of banking regulation an instrument that has been so closely scrutinised both inside and outside Spain, that has given rise to such differing opinions as to its merit, and that is still today a prominent issue in the micro- and macroprudential banking regulation debate.

From the outset, international banking regulators and supervisors showed interest in countercyclical provisions, assessing as positive their usefulness in reducing the amplitude and negative effects of the credit cycle and, especially, in protecting the solvency of banks from their own lending excesses. Nonetheless, many supervisors have not had the opportunity to introduce such provisions, either because lending growth was moderate or because, unlike the Banco de España, they did not have the necessary accounting standard-setting powers. Those that have applied them have adapted them to the characteristics of their own national economies and to the needs of their banking systems. Notable examples are: Colombia, where they were introduced in 2007 and subsequently modified in 2009; Peru, where they were activated for the first time on a compulsory basis at the end of 2008 until September 2009, and again from October 2010 until November 2014;[2] and Panama and

1 The general term "countercyclical provision" is used throughout this book to refer to provisions for credit risk that are built up during upswings and released during downturns. This expression captures the essence of the provisions for loan impairment as a result of credit risk (loan loss provisions) that were launched by the Banco de España in the second half of 2000. Accordingly, this term encompasses the statistical provisions, which is how they were known until 2005, and the new general provisions (as the original statistical provisions were subsequently renamed) from 2005, as well as the general term dynamic provisions, the name they usually receive at the international level, especially since they became involved in the discussions regarding the procyclicality of the financial system and its possible correction by means of countercyclical instruments. Finally, more generally, loan loss provisions are the accounting reflection of asset impairment as a result of credit risk and may take the form of specific, general or countercyclical provisions, covering incurred or expected losses, as will be seen and discussed in this book.

2 Choy and Chang (2014) contains a detailed account of their history and operation, and of other macroprudential instruments used in Peru.

Costa Rica, where they were introduced in 2013 and 2016, respectively.[3] The purpose of countercyclical provisions is always the same: to protect national banking systems from the instability arising from excessive lending growth and the consequent build-up of risk.

Most Spanish banks, with varying degrees of vehemence, opposed countercyclical provisions, both when they were first introduced and when they were reformed upon the entry into force of International Accounting Standards (IAS), owing to their negative impact on accounting profit in the short term.

Accounting regulators, who issue and apply rules for the preparation and reporting of the financial information that firms provide to investors and the general public, also opposed countercyclical provisions from the outset. In their opinion, such provisions cloud the true and fair view of banks that their financial statements should provide, by subordinating them to the prudent valuation traditionally required by banking supervisors and incorporating a forward-looking element into their calculation, contrary to accounting's traditional, orthodox backward-looking approach based on incurred losses.

Bank analysts, consultants and, sometimes, even the banks themselves have changed their views on countercyclical provisions over the credit cycle. One true anecdote illustrates this clearly. When countercyclical provisions had to be modified in 2004, in view of the imminent introduction of IAS, the Banco de España requested the opinion of a recognised banking consultant, within the framework of its regular exchanges of views with analysts, investors and the supervised institutions themselves on the situation in the banking system and on regulatory changes. The consultant launched a furious attack on countercyclical provisions, arguing that they reflected excessive conservatism on the part of the Banco de España, could not possibly be depleted in any future downturn in Spain, resulted in excessive coverage of non-performing loans (NPLs), restricted Spanish banks' room for manoeuvre and placed them at a competitive disadvantage with respect to foreign banks, etc. The meeting was particularly tense. Many banks held the same views, although they expressed them to the Banco de España differently.

3 The central bank of Uruguay, which is also responsible for banking supervision, launched a system of countercyclical provisions in July 2001, but the outbreak of the country's banking crisis shortly afterwards, largely as a result of contagion from the Argentine crisis, led to its suspension in 2003, before it had been possible for its countercyclical effectiveness to be demonstrated. From 2012 the provisioning system was reformed, with recalibration of the specific and statistical provisions to enhance their dynamic behaviour. Bergara and Licandro (2001) contains a theoretical reflection on the use of provisions to reduce the excessive variability of lending over the cycle.

Several years later, when banks began to use the accumulated countercyclical provisions to bolster their income statements and, consequently, their solvency, the same consultant, at a similar meeting, said that countercyclical provisions were possibly a good instrument, useful for banks and for controlling the growth of lending to the private sector at a difficult moment for the Spanish economy, with activity slowing sharply and strains in the housing market already apparent. However, the anecdote does not end there. The most interesting part comes next.

In 2011, when the Spanish banking system's problems were already apparent both inside and outside Spain, the same consultant, in a measured but firm tone, criticised the Banco de España for not having been harsher during the upturn by requiring substantially higher countercyclical provisions than it actually did. This was the same person, the same expert, displaying totally procyclical behaviour (and opinions), precisely the type of behaviour that countercyclical provisioning is intended to counter.

This profound misunderstanding of countercyclical provisions (to elegantly summarise the above anecdote) has been a general feature of their existence, as will be seen throughout this book.[4]

Considering that the vast majority of bank failures or situations of extreme stress (where formal insolvency is avoided by government intervention to prevent the severe externalities that such insolvency would generate) tend to occur in downturns, one would think, a priori, that an instrument of this nature that protects banks in downturns should appeal to bank depositors and, in general, to all those who supply external funds to banks. This funding accounts for approximately 95% of all the funds raised by banks, and therefore should attract the interest and attention of bank management. Shareholders, in particular those in for the long haul, should also view favourably an instrument that stabilises banks' income statements and strengthens their solvency. Most bank employees and borrowers very probably share this objective of medium-term stability for the bank, given the human and relationship capital invested in the institution.

So which bank stakeholders might question or oppose countercyclical provisions? Perhaps shareholders who are not in for the long haul but are only interested in obtaining the largest possible dividend flow in the short term. Perhaps the institution's managers, who may also have a short-term view and/or variable remuneration dependent upon the profits they are

4 An article by Catan and House (2008) in *The Wall Street Journal Europe* contains a very similar – albeit much more concise – version of this dramatic change in the Spanish banking sector's perception of countercyclical provisions.

able to generate net of provisions and who lose their room for manoeuvre if they have to use a substantial proportion of net operating income to set aside provisions that go beyond simply covering the incurred losses identified in specific exposures.[5] None of these arguments are sufficient to warrant not introducing regulatory measures, such as countercyclical provisions, to help to protect financial stability and the general interest.

Readers who have reached this far will realise that this is an unusual book to be published by a central bank that also has responsibilities (now shared) for banking supervision. This book is about how regulatory policy measures are shaped, about the interplay during their gestation between, on the one hand, ideas, intuitions and theoretical and empirical technical work and, on the other, pressures exerted by supervised institutions, either directly, or indirectly through the media, sometimes with the active assistance of consultants, analysts and academics. All of the actors involved have legitimate and explicable interests; it is the consequences that arise from one decision or another for the parties involved and for the general interest that vary.

This book is a window into the kitchen where regulatory measures are prepared. It seeks to present the reader with the list of ingredients for a new and original dish in world regulatory cuisine, which is oversaturated with growing uniformity and obsessed with regulatory capital. Countercyclical provisions were a Spanish banking sector dish that inflamed conflicting passions and inspired imitations, with attractive variations in other latitudes where there is more willingness to appreciate the food, or substance, they contain, and where they were adapted to local needs, preferences and flavours.

This is certainly not the first publication on provisions by the Banco de España, or the first publication on countercyclical provisions. Mention must be made here of two major works, brimming with searching analysis, intellectual rigour and subtle, brilliant, intelligent critiques of preconceived positions and accounting orthodoxy. The first is the book by Pedro Martínez Méndez (1991), a work of art in the field of banking analysis, a rigorous analytical text that presents, using data and conceptual reflection, a completely different

5 Becht et al. (2011) speak of the differences between the corporate governance of banks and of other businesses, characterising banks as "multi-constituency organizations". They make recommendations on the basis of their analysis that transcend the principles of the Basel Committee on Banking Supervision (BCBS) of 1999, 2006 and 2010 to strengthen the corporate governance of banks (BCBS (1999, 2006a, 2010a)), specifically suggesting that bank creditors (depositors) be represented on banks' boards of directors through the Deposit Guarantee Scheme. This, they argue, could mitigate excessive risk-taking by banks. Salas (2003) presents a pioneering approach in Spain that conceptualises the corporate governance of banks as the representation of all the interested parties (shareholders, bondholders, depositors, etc., not only the former), and the fiduciary duty of managers with respect to all bank stakeholders.

way of viewing the balance sheet, income statement, profitability and solvency of banks. This is an essential work that has unjustly fallen into oblivion, perhaps on account of the author's early death. The second work, by Rafael Prado (2002), is a passionate defence of statistical provisions from the standpoint of Accounting Doctrine (with capitals, as he would surely write it) and of efficacy, that is, from the standpoint of true and fair view and supervisory prudence. This work is a veritable statement of intent from page one, as befits an expert with a long career behind him and his own opinions on matters in his area of competence.

Both works contain an historical review of the development of accounting regulation for banks and, in particular, of loan loss provisions from their earliest days, in 1968 or thereabouts. Also, not without humour, they explain in detail and place in context the successive changes in the regulation of loan loss provisioning, instructing the reader on the need for, and the relevance and analytical and practical consequences of, such provisions. We recommend those interested to read both books carefully, as an excellent way of getting to know the history of loan loss provisions, which are closely linked to the history of banking in Spain, masterfully told in both books.[6]

A book of this kind would never have come to fruition without the wholehearted support of the head of the institution publishing it. In this case the personal determination of Governor Linde has been decisive. He has long argued that the story of Spanish countercyclical provisioning needs to be recorded for posterity, and his passion for history and literary criticism has surely played a part in this book's origin.

The book offers its readers highly detailed quantitative information, along with the technical explanation of the regulatory instrument and the changes it underwent, to allow them to judge its merit for themselves. At the same time, it seeks to provide readers with the historical context in which countercyclical provisions originated, developed and, recently, disappeared, albeit not without first having been partially reincarnated in a new regulatory instrument, the countercyclical capital buffer, which shares their philosophy. Furthermore, the disappearance of Spanish countercyclical provisions notably coincides with a profound change, due to take place in 2018, in the way loan loss provisions are calculated, with the adoption of the concept of expected loss and the discarding of that of incurred loss. This means that, finally, the accounting authorities have accepted a forward-looking methodology for calculating asset impair-

6 Another fundamental reference for studying the historical development of Spanish provisioning is Poveda (2011).

ment due to credit risk.[7] The concept of expected loss is intimately linked to the Spanish statistical provision, through the coverage of latent risk, and to its subsequent modification in 2004, through its α and β components, as will be explained in detail in Chapter 2.

After reading the book, readers will be better able to appreciate the irony of the disappearance of countercyclical provisions, just when the countercyclical capital buffer has been approved in a large number of jurisdictions and when loan loss provisions in the international accounting regulations will shortly become forward-looking.[8]

Moreover, reflecting the personal wish of Governor Linde, this book is intended to be entertaining, not an easy task at first sight, when the main subject (bank loan loss provisions) is so dry. Accordingly, the authors have taken some artistic licence, for example in Chapter 1, by not following a strict chronological order, or by weaving conceptual discussions into the narrative, so readers are kindly asked to excuse them if greater attention is sometimes required, or if they come across some repetition. With the same aim of maintaining the reader's interest in the content of the book, some discussions are deliberately provocative, to stimulate debate over an instrument, Spanish countercyclical provisions, that has been anything but uncontroversial.

This way of writing is in a tradition established in the past at the Banco de España (Pedro Martínez Méndez, Raimundo Poveda, Rafael Prado) and also by certain international supervisors. Indeed, broaching for the first time the discussion of the necessary dialogue amongst central banks, micro- and macroprudential supervisors and other authorities (tax, securities, accounting) in order to achieve effective financial stability, Crockett (2000) said: "You will excuse me if I am deliberately provocative, in the interest of sharpening the issues and encouraging a broader debate". Naturally, the opinions in this book are the responsibility of the authors alone, and are not necessarily shared by the Banco de España or the Eurosystem.

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7 Technically, both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB), the two most important accounting standard-setters at the international level, are changing from an incurred loss to an expected loss (Expected Credit Loss, ECL) model. The IASB is to introduce the concept of ECL through International Financial Reporting Standard 9 (IFRS 9), due to enter into force on 1 January 2018, while the FASB will introduce its model of provisions based on expected loss (Current Expected Credit Loss, CECL) from January 2020. It is notable that these two bodies have not been capable of reaching a single forward-looking provisions model based on the expected loss on credit portfolios. Banks are already expressing their concern over the changes (see, for example, McLannahan (2016)).

8 The change in the accounting orthodoxy from incurred loss to expected loss could not escape the notice of one of the main defenders of the latter and also an attentive and implacable observer of the development of international accounting and regulatory provisions. Poveda (2014) highlights this long-awaited final victory.

It is, moreover, hardly surprising that Governor Linde has always insisted, elegantly but persistently, that this book must see the light of day. In the recent past it is hard to find another matter or issue, in the regulatory sphere or any other, where the Banco de España has played such a leading role and which has raised so much interest worldwide. The idea underlying countercyclical provisions contains the seed for the new macroprudential instruments that have begun to emerge in response to the worst international banking crisis since the Great Depression of the 1930s.[9]

In the light of the new debate over macroprudential policy that arose from the crisis, countercyclical provisions, established and applied by the Banco de España in the face of all opposition, are now seen as a key tool, a pioneering macroprudential instrument, going back more than fifteen years, allowing the expectations raised by this new era of macroprudential banking regulation to be assessed and circumscribed. The effectiveness, or ineffectiveness, of countercyclical provisions and the regulatory and supervisory lessons drawn from this experience will be crucial when it comes to developing and calibrating new macroprudential instruments and, especially, gauging the extent to which they may be relied upon.

The fact that this instrument has been applied by the Banco de España over a complete credit cycle (with a very pronounced upturn and downturn) makes the regulatory innovation that countercyclical provisions represented a subject of great interest, and the Banco de España one of the few macroprudential supervisors with lengthy practical experience in the area. This book also seeks to present this experience to the general public.

As mentioned above, the Banco de España has released a significant number of publications on countercyclical provisions over the years. The references at the end of the book bear witness to this. Initially, the publications were devoted to explaining the origin and technical features of countercyclical provisions. Subsequently they sought to explain changes to those provisions and to substantiate the need for a countercyclical instrument to address the problems inherent in credit cycles. More recently, they have begun to assess, in great detail, using rigorous econometric techniques, the impact of countercyclical provisions on the Spanish banking sector and the real economy. This book is not a summary of those publications, but naturally it has drawn on them to support its arguments and to justify and assess the proposed objectives of countercyclical provisions.

9 For a description of the objectives of the Banco de España's macroprudential policy, and of the instruments and indicators used in its design, see Mencía and Saurina (2016).

The book is essentially the account of a passionate adventure. It is full of intellectual battles, empirical estimates obtained with a high degree of uncertainty, innumerable presentations and discussions at the international level in practically all four corners of the world and fierce criticism, often with little foundation beyond the narrow short-term interest of the person making it. However, it is also a nod to a handful of central bankers and regulators (Luis Ángel Rojo, Jaime Caruana, Gonzalo Gil, Raimundo Poveda and José María Roldán) who had the courage to make some difficult decisions, defying almost all opinion, guided by the ultimate aim of protecting Spanish banks from the adverse consequences of the credit cycle, by applying prudent valuation principles and strengthening the true and fair view of banks through the information contained in their financial statements.

Chapter 1, the longest, explains the origin, changes and adaptations, build-up and release of countercyclical provisions, providing readers with the national and international historical, economic and regulatory background to the development of those provisions. It also analyses their disappearance, in a context of European accounting, regulatory and supervisory convergence, and their partial reincarnation in another regulatory instrument already in force. It is a transparent account of the inner workings of the regulatory and supervisory kitchen, allowing the reader to appreciate the complexity involved in setting regulatory standards, their nuances and limitations.

Chapter 2 presents the technical descriptions of how countercyclical provisions work. The plural is used here because, with the arrival of IAS in 2005, the initial statistical provisions had to be transformed into a new general provision. Their form and presentation had to be changed, so that their substance could remain almost unchanged, although, at the empirical level, the time profile of the provisioning requirements generated by the two variants of the countercyclical provision is not the same. In any event, both mechanisms are triggered automatically, which is one of their great strengths as a macroprudential instrument.

Chapter 3 is devoted to the quantitative (numerical) analysis, to enable readers to form their own opinion as to whether or not countercyclical provisions are useful and to gauge the amount of faith they can place in this regulatory instrument to control the credit cycle and its impact on the real economy and, in short, on the well-being of the society the banking regulator serves. Or in other words, to determine how much assistance is needed from other regulatory instruments and monetary, fiscal and microprudential supervisory policy. This is a controversial subject, which lies at the heart of the calibration of macroprudential instruments. Avoiding this issue will not help the new generation of regulators who need to take decisions on such instruments. Separately assessing the contribution that monetary, fiscal and micro- and macroprudential policies make to economic and

financial (banking) stability is extremely difficult, and analysing all the interactions between those policies, which still lack an adequate conceptual framework, is highly complex. But overlooking those connections would amount to inexcusable negligence after the banking crisis we have suffered, which has had such a high economic and social cost and from which we have not yet recovered.

The book concludes with an epilogue presenting an assessment of the lessons learned, not in an endeavour to close the debate on countercyclical provisions or, more generally, on the new macroprudential instruments at the service of financial stability, but rather, on the contrary, to stimulate debate so that the credit cycle can be better controlled, thereby reducing economic fluctuations and preventing a sharp decline in social well-being.

Chapter 1

History of Spanish countercyclical provisions

1.1 Origin of countercyclical provisions

Two strands of thought (macro- and microprudential) come together in the origin of Spanish countercyclical provisions, united by a common concern: how to preserve the stability of the Spanish banking system after Spain adopted the euro on 1 January 1999. This concern was well founded, given the experience of the years following Spain's entry into the European Economic Community (EEC) on 1 January 1986.

Shortly after Spain joined the EEC, bank lending to the private sector expanded sharply, while house prices accelerated. Relatively high real interest rates, partly the result of a restrictive monetary policy designed to control inflation, which was still too high, led to upward pressure on the peseta (the Spanish currency prior to the euro) and a significant inflow of external financing. The abundant liquidity was channelled through the banking sector to firms and households, with real credit growth (i.e. net of inflation) above 10% per annum over the period 1987-1989. A significant part of this financing fed household demand for residential mortgage loans and property developers' demand for credit for housebuilding.

With the onset of the crisis in the second half of 1992 and, above all, in 1993, the lending excesses of the upswing mentioned above became apparent, with a significant rise in non-performance among both mortgages and construction and property development loans. Foreclosures by banks of property received as compensation for the non-payment of loans rose. House prices did not fall in nominal terms (although they did in real terms), but remained stagnant for five years.

Banks, with net interest income still at high levels, slowly digested the change in the credit and business cycle, albeit not without difficulty in the case of certain large institutions. This experience, at a time when the Banco de España still had complete monetary policy autonomy, highlighted the difficulty of controlling the credit cycle without encountering dilemmas that had no simple practical solution (interest rate increases to control the rapid lending growth, which led to short-term foreign capital inflows and currency appreciation, that were insufficient to fully tame inflation). In fact, the Banco de España imposed quantitative limits

on the growth of lending to the private sector in the second half of 1989 and throughout 1990 in an attempt to moderate this expansion.[1]

In the reflections that led to the adoption of countercyclical provisions, considerable weight must surely have been given to this experience of the credit cycle, exacerbated by the property cycle and its abrupt ending, which had serious consequences in terms of NPLs and the impact on bank profitability and solvency. Likewise, to the prospect of joining a single currency area in which interest rates would presumably converge at permanently lower levels, encouraging higher household and business borrowing, which the Banco de España would no longer be able to address through its own autonomous monetary policy. How would the Banco de España control the credit cycle when it lost the ability to determine the reference interest rates which, from the start of monetary union, would be established in Frankfurt for the euro area as a whole? This macroprudential view of countercyclical provisions[2] was supplemented by a microprudential consideration.

Prudent valuation and true and fair view

The Banco de España, unlike many other central banks and banking supervisors, had, and still has, by delegation from the Ministry of Finance, the power to set accounting standards for banks. That is to say, the Banco de España had the ability, for example, to determine the binding regulations to be applied in relation to loan loss provisioning for credit risk. The Banco de España used this power extensively to set the accounting rules to be followed by banks when preparing their accounting statements, for example, through Banco de España Circular 4/1991 (CBE 4/1991), also known as the Accounting Circular.

In its capacity as microprudential supervisor, the Banco de España has traditionally paid great attention to the correct classification of assets on the balance sheet and the existence of appropriate provisions, i.e. to the correct valuation of banks' assets. With their focus on short-term profits, banks may be tempted to underprovision for asset impairment, distorting the true and fair view of their solvency.[3]

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1 To a certain extent this measure to control lending may be considered a macroprudential instrument (Kelber and Monnet (2014)). For a very broad retrospective review of macroprudential policy in the United States, readers may consult Elliott et al. (2013). Elliot (2014) shows that some of the macroprudential instruments identified were used in the past to implement monetary policy (e.g. minimum reserve requirements), so these two policies were perhaps closer to each other than was initially assumed.

2 For one example of this view, see Fernández de Lis, Martínez Pagés and Saurina (2000, 2001).

3 See the magnificent book by Pedro Martínez Méndez (1991), which recounts the changes and modifications in the definition of non-performing loans since their origin and the associated loan loss provisioning requirements, as well as banks' response to them.

Prudent valuation was historically the guiding principle of the Banco de España's accounting regulations, i.e. the prudent reflection of banking reality (for example, recording asset impairment from the moment it is known and recognising profits only when they become effective through their realisation). Prudent valuation prevailed over true and fair view if the principles came into conflict. This approach generally predominated among banking supervisors, although not among securities market supervisors, who were more interested in a true and fair view than in a more conservative accounting approach that protected the solvency of institutions through the creation of provisions, reserves or other elements that could be used in the event of difficulty to keep institutions afloat without the need for public support.[4]

This difference of approach stems from the fact that banking supervisors are responsible for protecting the value of bank deposits, while securities market supervisors act to protect shareholders and other investors, so their concept of true and fair view is from the viewpoint of the information relevant for them.

The prudent valuation principle underlies countercyclical provisions, but arguably so does that of true and fair view. An explanation for this apparent contradiction, as well as an excellent presentation on the origin, design and operational mechanism of countercyclical provisions (then called statistical provisions), may be found in Poveda (2000). Credit risk arises when a loan is granted, not when it becomes non-performing and has to be provisioned. Accordingly, it would seem reasonable to require a provision from the very moment of origination to cover the statistical possibility that the loan will not be repaid. In every homogeneous loan portfolio there is a non-zero percentage of loans that will not be repaid. This is known at the time of origination, although it is not possible to identify the specific loans that will not be repaid because, if that were possible, those loans would not be granted. Consequently, there is a non-zero expected loss in every homogeneous loan portfolio. The aim of the statistical provision was, essentially, to cover that average loss from the very moment of origination. Therefore a provision, i.e. a charge to the income statement, was made to ensure that the value of banks' assets was recorded prudently and in line with the existing level of risk, thus appropriately reflecting the impairment of those assets.

If the average expected loss over the cycle is 2%, that amount should be provisioned at the time of origination, in order to adjust the value of the homogeneous loan portfolio. Arguably, this accounting adjustment is consistent with a true and fair view, since it reflects a statistical loss that, according to historical experience, the bank is going to suffer. By setting aside this

4 For a discussion of the US case, see, inter alia, Wall and Koch (2000).

provision at the time of origination, the value of the asset can be adjusted in line with its expected value. For this reason, Raimundo Poveda, Director General of Banking Regulation of the Banco de España when the countercyclical provision was created, sees no contradiction whatsoever between these two principles in the document cited above.[5]

Prado (2002) masterfully explains how true and fair view and prudent valuation complement each other in the case of statistical provisions and likewise advocates the adaptation of accounting rules to the specific business of firms (as in the case of banks). With hundreds of thousands of loans granted, banks can be certain that some loans, despite showing no signs of impairment today, will not be repaid upon maturity. This certainty should be reflected in the accounts.

In banking the accrual principle is applied, as is that of the matching of revenues and expenses. It is not possible to recognise revenues today and defer expenses until a future period. One cost of lending for banks is default, which is certain to occur, even though there is no apparent impairment today and we cannot identify which creditor will default. Thus, if interest income is recognised on loans granted, its cost in terms of default should also be recognised. Provisions must therefore be set aside for loans, to ensure that income and expenses are appropriately matched. This prevents profit from being skewed upwards during periods of strong credit growth without any immediate loan impairment, so that the income statement reliably gives a true and fair view of the bank.[6]

Prado (2002) adds that it does not seem appropriate that the risk premium that banks charge their borrowers precisely to absorb the credit risk inherent in their loan portfolios should be reflected in higher current accounting profits simply because the signs of impairment of the credit portfolio that will definitely be seen sooner or later have still to appear. Calculating loan portfolio impairment is not easy, but that is not sufficient reason for not making an estimate, which will always be better than failing to recognise it. Thus, Prado argues that statistical provisions make prudent valuation, the true and fair view, the accrual principle and the matching of revenues and expenses compatible. Accounting doctrine and efficacy are com-

5 Poveda (2012) insists, pedagogically, against the views of part of the accounting world, that an essential point of countercyclical provisions is precisely that their recognition of certain future events, which can be statistically anticipated, improves the true and fair view given by banks' financial statements.

6 Significantly, Termes (1995), president of the Spanish Banking Association for many years, IESE Business School lecturer and, previously, a private bank CEO for more than a decade, calls the *true* net interest margin the one that includes a deduction for loan loss provisions. Plender (2012) draws a more journalistic conclusion: if loan loss provisions are too low as a result of accounting rules, which do not permit forward-looking provisions, assets will be overvalued.

bined in his subtle terminology. Without this conceptual, theoretical and doctrinal reflection, it would have been very difficult to introduce statistical provisions.[7]

The procyclicality of specific provisions and the need for countercyclical provisions

Another reason for the statistical provisions proposal was to counteract a worrying development that had been observed for years in Spain. Credit risk provisions behaved very procyclically, i.e. they were very low for long periods, when the economic boom kept non-performing loans at very low levels, but, suddenly, when the business cycle changed direction, so did provisioning requirements, increasing very considerably at the worst possible moment, with the consequent negative impact on the income statement. This procyclicality of provisions contrasted with the behaviour of credit risk (an ex-ante concept), which varied less over the cycle. Statistical provisions were intended to correct this anomaly by substantially modifying the weight of the general component or, more strictly speaking, by creating a third countercyclical element in addition to specific and general provisions. Indeed, the high degree of procyclicality of provisions in Spain was due to the behaviour of specific provisions, which was completely in parallel with the appearance and behaviour of non-performing assets.

In short, the decision to introduce countercyclical provisions was based on two factors. First, a genuine concern regarding the credit cycle and how it would be controlled when Spain entered the euro area and sovereignty over monetary policy decisions was transferred to the ECB. This concern was fuelled by the then still-recent experience of the previous credit cycle (very strong credit expansion, a relaxation of credit standards, a substantial increase in non-performing loans with the onset of the recession, as well as intervention in a significant bank to avoid the externalities its failure would have produced for the Spanish banking system).

Second, the real possibility of imposing provisioning requirements that simultaneously strengthened the prudent valuation and true and fair view of banks, on the basis of rigorous bank accounting technical arguments made by experts of the Banco de España, who anticipated by almost two decades the change of approach recently approved by international accounting regulators with regard to the coverage of asset impairment losses arising from credit risk based on the concept of expected loss.

7 Readers interested in bank accounting, both from a conceptual point of view and with regard to its implications for the business of banking and its risks, may consult Pérez Ramírez (2009).

It also seems likely that these two factors were joined by some more short-term concerns. First, the strong credit growth in 1998 and 1999 (at double-digit real rates higher than those recorded at the peak of the previous credit cycle, which ended with some institutions in serious difficulty),[8] largely as a consequence of the fall in the real interest rate, an unambiguous sign of the process of convergence towards the core euro area countries. Second, the realisation that the level of provisions built up by Spanish banks in 1999 was the lowest in all the OECD countries, and at the same time the most procyclical,[9] two additional warning factors that were also partly a consequence of the significant rise in lending to the private sector then taking place.

All these factors were reinforced by a determined push for their introduction by senior figures in the Banco de España, despite being broadly dismissed by the banks[10] and the widespread scepticism, if not veiled opposition, of accounting doctrine to a provision that covered expected losses and, therefore, was not in perfect harmony with the accounting principle of coverage of incurred losses, which was then (and until very recently) firmly established in the doctrine. The Banco de España would again find itself in a similar situation several years later when it had to modify countercyclical provisions to adapt them to the entry into force of International Accounting Standards. Meanwhile, credit rating agencies viewed the entry into force of countercyclical provisions very positively because they clearly appreciated the contribution they would make to bolstering the solvency of Spanish banks.

Statistical provisions came into force in July 2000, following their approval by the Governing Council of the Banco de España at its meeting of 28 June 2000, the last one chaired by Governor Luis Ángel Rojo. Accordingly, their initial impact on bank income statements was seen in the third quarter of that year. In subsequent years, banks recorded the provisions in their accounts in a timely fashion, with a growing total provision stock, as explained in detail in Chapter 3. No significant malfunction was appreciated as a result of their launch or subsequent compliance therewith, either in the lending market or in banks, nor was any impact on the stock market value of Spanish banks ever attributed to them, in contrast to the catastrophic predictions made by banks before the provisions came into force.

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8 "Rojo announces measures to curb lending" was the headline of the financial daily *Expansión* on 21 June 2000; "The Banco de España requires banks to make more provisions to curb lending" reported the financial daily *Cinco Días*, adding, "Luis Ángel Rojo maintains that lending growth is inappropriate, from the viewpoint of banking prudence".

9 See Saurina (2002).

10 Some newspaper headlines from the time serve as evidence of this opposition: "Banks reject the new circular on non-performing loans and ask the Banco de España to delay its application", *Expansión*, 22 June 2000; "BBVA considers that the central bank should not concern itself with lending", *El Mundo*, 23 June 2000.

The appearance of countercyclical provisions was an extremely innovative development in the Spanish and international accounting and regulatory world. It is true, as Poveda (2000) himself clarifies, that this accounting technique was widely used in the insurance industry, where insurers make provisions for risk from the moment the contract is signed with the customer, which is the precise moment the insurer accepts the risk. The fact that the loss data are less controversial than in the case of credit portfolios (mortality tables for life assurance are calculated using actual data on deaths by age and sex and do not stem from asset classification decisions that depend to a greater or lesser extent on the portfolio manager's opinion) probably explains why provisions based on expected losses were accepted by accounting experts more readily and much sooner in insurance than in banking.

It should be noted that the way the statistical provision works (explained in detail in Chapter 2) is quite simple but very effective: institutions have to cover at all times the expected loss over the cycle on the credit portfolio, broken down into homogeneous risk categories, which means additional provisioning during upturns, when default and, more generally, nonperforming loans, are very low, and a release of those provisions, credited to the income statement, when the business cycle decelerates and defaults begin to arise. Hence, the original statistical provision could be said to be countercyclical, although strictly speaking the aim was for the level of provisions per euro lent to remain relatively constant over the cycle.[11]

Calibration of countercyclical provisions

With admirable sincerity, uncommon among banking regulators and supervisors, Poveda (2000) clearly explains the process of calibration of the statistical provisions, while also leaving the Banco de España's interaction with deposit institutions during the process quite plain. Thus, in keeping with the simplicity of the idea behind countercyclical provisions, it was intended that, on average, institutions should maintain a level of loan loss provisioning similar to that seen in the period 1986-1998, assimilated to average expected credit loss which was close to 0.9% per annum.

The period used to calibrate the statistical provision included a complete credit cycle. From 1987 to 1991 there was strong credit growth, at real year-on-year rates of around 10% and, in the case of mortgage lending, of over 15%, while real economic growth rates were over 4% and real house prices were growing at annual rates of 13%. This expansionary phase was followed by a second phase, which began as a notable slowdown in

11 A target that was all the more attainable the smaller the fluctuations in credit from one period to another.

credit growth and then, in 1993, became an actual contraction, while the Spanish economy that year suffered its worst recession for thirty years. From 1992 to 1996 real house prices fell at year-on-year rates of 4% while lending to the private sector was flat. Following this downturn, the economy grew strongly again between 1997 and 1999, with real GDP growth rates close to 4%, a recovery in house prices (at real growth rates of 5% year-on-year) and double-digit credit growth (16% year-on-year in real terms in the case of mortgage lending).

The period used to calibrate the statistical provision thus contained a full credit cycle, the latest at the time, including in the middle of the period what was a severe economic crisis in comparison with the experience up to that date. Having determined the aggregate level of provisions, the supervisor's expert judgement did the rest, classifying the homogeneous portfolio risk levels into categories ranging from negligible-risk (which included lending to the public sector), through low-risk (residential mortgage loans) to high-risk (credit cards). In addition, the parameters that were used to calculate the amount of provisioning required among the various risk categories were fixed. And these were, apparently, all the calculations made to calibrate the statistical provision. Poveda (2000) estimates the impact of the provision on bank profits as around 10% of post-tax profit, which proved to be rather low when compared with the actual data (see Chapter 3 for further details of this impact).

Once the regulatory change proposal was outlined it was submitted to the banking industry and the general public for consultation, as required and in keeping with best regulatory practice. It was not well received by banks, to judge by the press of the time. Indeed, they were strongly opposed, perhaps contrary to what one might expect of prudent bankers, concerned not only with banks' short-term profit but also with their medium-term survival and their resilience to economic downturns. The immediate negative impact of the countercyclical provision on the income statement was the reason for this fierce opposition by banks to the regulatory change. In retrospect, this attitude remains surprising, given the amplitude of the credit cycle that Spanish banks would enter into in the first decade of the third millennium, against the background of an unprecedented housing market boom, and the no less significant credit and economic contraction that would follow this expansion, with consequences that are still with us today.

Among other factors, this strong opposition by Spanish banks might be assumed to have reduced the initially proposed calibration to cover just over 0.4% of the credit portfolio as explained in Poveda (2000). The supervisor reduced the initial regulatory requirement by half, a concession that must have seemed reasonable to the authorities of the time if it ensured the launch of a prudential mechanism that was completely new in the international banking

landscape and that would strengthen bank solvency in the medium term.[12] In addition, the countercyclical provision regulations were to come into force, as mentioned above, in July 2000, reducing the impact in the first year of operation by half.

Incidentally, this interaction between supervised institutions and supervisor is not at all rare. The most paradigmatic case is probably the comparison between the initial calibration proposed by the Basel Committee on Banking Supervision (BCBS) to replace the initial regulatory capital accord reached in 1988 (known colloquially as Basel 1 or the Cooke ratio),[13] and that eventually agreed upon. The Basel 2 calibration, used to determine the new capital requirements and make them more risk sensitive, which was finalised in 2004 and subsequently revised and completed in 2006 (BCBS (2006b)), was much lower than the initial proposals made in 2002 and submitted to the international banking industry for consultation, discussion and calibration.

Finally, an upper limit was placed on the statistical provision stock, whereby it could be no more than three times the latent risk. This risk was estimated to be on average around 0.4% of the credit portfolio, so the maximum provision stock that could be built up was around 1.2% of that portfolio. Poveda (2000) quite rightly argues that Community law at the time did not permit much more and that, in any event, the provision was not intended to grow indefinitely over time. The existence of the upper limit probably also helped to overcome banks' opposition to the countercyclical provision.

The international accounting authorities' view of this new provision created in Spain was of no concern, because at the time the Banco de España had full autonomy to set accounting standards for Spanish banks, as already mentioned.

Tax deductibility of countercyclical provisions

Efforts were made to make countercyclical loan loss provisions tax deductible (similarly to specific provisions), i.e. to allow the annual amount set aside under the statistical provision to be deducted from taxable profit, thus reducing the negative impact on institutions'

12 Prado (2002) argues that the correct assessment of the final calibration accepted for the statistical provision requires taking into account the impact of subsequent recoveries of written-off assets, as well as the amount of the general provision and the more detailed measurement and management of credit risk. However, Poveda (2012) insists that the reduction in the statistical provision parameters was as a result of banking industry opposition.

13 Poveda (2010) contains a highly detailed and interesting description of the history of both accords and their ins and outs. A documentalist's view, uncommon in the literature, may be found in Penikas (2015). With regard to nomenclature, this book departs from the usual way of citing the various Basel capital accords with Roman numerals (Basel I, II and III), using the arabic numbering system instead.

income statements. However, the negotiations with the Ministry of Finance were unsuccessful. There was no way of convincing them that, despite being countercyclical, the statistical provision was equivalent to the specific provision, insofar as both cover actual losses, although in the first case, unlike in the second, the losses have still not materialised in any specific loan. The Banco de España acted independently of the government, but so did the government with respect to the central bank, paying a deaf ear to its request which, in this case, had the full support of the banks. However, the Ministry of Finance did allow the amounts provisioned to be considered deferred tax assets, i.e. recoverable when the statistical provision was used.[14]

The passage of time will provide a different perspective on this discussion, which may be of interest in the future. It is very likely that tax incentives for loan loss provisions or, more accurately, not penalising some of them (statistical, countercyclical, etc.) encourages provisioning, contributing to the strengthening of bank solvency and making bank failures and substantial reductions in credit when the economy moves into recession less likely, thus avoiding a deepening of the economic crisis. Bailing out insolvent banks with public funds forces consideration, among other issues, of the possible relationship between not penalising provisions through taxation and ultimately injecting public funds to protect bank depositors and contain systemic risk. That is to say, there may be a trade-off between tax incentives today and future tax expenditure.

The literature is not oblivious to the impact that tax deductibility has on the incentives to set aside loan loss provisions. A recent paper by Andries et al. (2015) shows that provisioning incentives increase with the corporate income tax rate, provided that provisioning is tax deductible. This intertemporal interaction between fiscal policy and regulatory (or macroprudential) policy is worth analysing more carefully, in particular as regards how to accommodate the different time horizons of the fiscal authority (normally short-term) and the prudential authority (long-term) in order to contribute to financial stability. In addition, these authors suggest that tax incentives for provisioning may act as a partial substitute for low quality microprudential supervision.

14 Deferred tax assets represent a right to pay lower taxes in future tax periods. They arise because the accounting framework and the tax framework use different criteria to determine the precise moment at which a particular expense can be recognised. For example, in the case of countercyclical provisions, in the accounting framework they are considered expenses at the time they are set aside, but in the tax framework they are not accepted as such until a future date (when the loss occurs). Accordingly, a bank's accounting profit is lower than its taxable profit, the latter being the amount to which the tax rate is applied to determine the tax payable; the difference between the tax that would be payable according to accounting profit and that which is actually paid is what is recorded as a deferred tax asset. When at a future date this expense is considered eligible in the tax framework, the opposite will be the case: accounting profit will be higher than taxable profit and the deferred tax asset will be derecognised.

Level playing field

It is worth pausing a moment to consider one of the arguments most frequently put forward by Spanish institutions to oppose countercyclical provisions, both when they were created and, as will be seen in Section 1.3, when they were reformed due to the arrival in Spain of IAS, namely that of the level playing field. Incidentally, this is a rather stale argument that tends to be raised when any regulatory change is proposed. Spanish banks and savings banks claimed that this additional, unexpected regulation, which only applied in Spain, would place them at a disadvantage to their foreign competitors. Given the characteristics of the Spanish banking market at the time the countercyclical provision was introduced this was highly debatable, since statistical provisions were required both of Spanish deposit institutions (commercial banks, savings banks and credit cooperatives, as well as specialised lending institutions that extended loans without being able to raise deposits directly from the public) and of the subsidiaries of foreign banks operating in Spain. Only the branches of foreign banks, over which the Banco de España had no regulatory powers, remained outside the scope of the provisioning regulations. The excluded institutions accounted for only a tiny part of the Spanish credit market, so the level playing field argument was very weak or virtually non-existent.

More interesting is the discussion regarding the potential impact of countercyclical provisions on the valuation of banks, i.e. on their market value. First it should be noted that there was no abrupt fall in the value of listed banks when statistical provisions were introduced, not even in advance, when the Banco de España's intentions regarding the creation of the countercyclical provision began to filter through to the press. What impact on the market value of banks should we expect of a provision that sets a relatively constant total provisioning requirement over the credit cycle?

Admittedly there was a decline in the cash flow (dividend payments) received by shareholders in the initial years, while the statistical provisions were built up. This is because they were introduced – in 2000 – during a cyclical upturn. Later however, when the cycle turned, the cash flow available to pay dividends increased, as the statistical provisions were used to mitigate the impact of rising specific provisions on the income statement. That is to say, countercyclical provisions do not permanently reduce the cash flow available to banks to pay dividends, but simply alter its timing.[15]

15 Obviously this analysis assumes, quite reasonably for the period analysed, that the dividend policy (pay-out) remains unchanged.

In addition, the greater stability of future cash flow may even lead to a reduction in the risk premium used to discount such flows required by shareholders (those more risk averse or with a greater need for stable revenue sources) who prefer a more stable flow of dividends. Whatever the case, the introduction of countercyclical provisions does not seem to have had a significant impact – either positive or negative – on bank valuations, which weakens the level playing field argument still further.

1.2 International interest in the new Spanish statistical provisions

The new Spanish statistical provision made its international debut shortly after it was first introduced. At the Annual Autumn Conference of Central Bank Economists, organised by the Bank for International Settlements (BIS), the Banco de España presented a paper explaining the rationale for the recently created provisions, their mechanism and a simulation of how they were expected to operate over the cycle (Fernández de Lis et al. (2001)). There was significant interest in the presentation, which was eventually included in the conference volume (BIS (2001)).

It is difficult to imagine a better setting for the international presentation of the Spanish statistical provisions: issue number one of the BIS Papers series, with such a suggestive title (so ahead of its time) as "Marrying the macro- and microprudential dimensions of financial stability" and, especially, with such dense content (mechanisms that amplify or dampen financial cycles, the responses of authorities and central banks to threats to the stability of the financial cycle, the role of capital and provisions in countercyclical mechanisms, etc.). In fact, the paper which opens the volume (Borio et al. (2001)) shows great foresight on crucial issues for financial stability that merely a decade later, with the arrival of the worst international financial crisis since the Great Depression, would be very high on the regulatory agenda, not only of central banks and of bank regulators and supervisors but also of the prime ministers of the most powerful countries in the world, as explained below.

Issues like the financial cycle and its impact on the real economy, the procyclicality of accounting standards and capital, the recommendation that both provisions and capital should increase in parallel with the build-up of imbalances and systemic risk (especially during economic upturns), the restrictions introduced by accounting standards so that expected losses can be provisioned and the interaction between monetary policy and financial stability are all analysed in the paper by Claudio Borio and his colleagues. On all these issues, clear opinions are expressed regarding the direction in which regulatory and monetary policy decisions should tilt in order to achieve greater financial stability. In this respect, a quote is sufficient to illustrate the alignment of positions represented by the decision to create countercyclical

provisions in Spain and the assessment of financial risks by this clairvoyant group of BIS economists, long before the start of the crisis: "The bottom line is that given our view that risk (expected losses) rises as the boom matures (…) one should see provisions increase during this phase of the cycle, rather than only once losses materialize. Such forward-looking behaviour would also reduce the need to make large additional provisions when developments turn out worse than anticipated".

This paper explicitly cites Spanish statistical provisions as an alternative to improve provisioning policy and the coverage capacity of provisions over the cycle. The opinion expressed on the relationship between policy and financial stability is also of great interest for its foresight and courage: "One view (that of Borio) is that financial stability considerations may, in certain circumstances, warrant an increase in interest rates larger than justified in terms of short-term inflation control. The rationale of doing so is that by containing the development of financial imbalances today, the central bank might help avoid financial instability in the future".[16] How much suffering the world would have been saved had the authorities paid more attention to these reflections![17] Only after the crisis, with its huge cost, did this minority opinion on the intrinsic interconnection between monetary policy and financial stability eventually become widespread among central banks.

In short, the BIS, whose economists, spurred on by the then General Manager, Andrew Crockett, and led by Bill White and Claudio Borio, had long been concerning themselves with the credit cycle, its engines and the adverse consequences that an excessive credit expansion could have for the economy, immediately showed interest in Spanish countercyclical provisions, appreciating their potential contribution to protecting the banking system from its own lending excesses. The relationship forged with the BIS at this time allowed the Banco de España to collaborate with them when the first steps were taken to design a countercyclical capital buffer after the international financial crisis had erupted, as explained in Section 1.4.

At the international level, regulators and supervisors showed curiosity and interest in the Spanish proposal but, generally, lacked the regulatory powers to impose these new countercyclical provisions, which anticipated by more than 15 years what accounting doctrine is currently, and not without difficulty, beginning to accept as possible: to provision for

16 Crockett (2001) is another example of the depth of the relationship beween monetary policy and financial stability and of how easy and dangerous it can be to overlook this. White (2006) insists that monetary and regulatory policy should be applied more symmetrically over the cycle, in order to avoid the development of macro-financial imbalances.

17 Jiménez et al. (2012, 2014) analyse and establish the interaction between monetary policy and financial stability in Spain giving support to what is now known as the risk-taking channel for the transmission of monetary policy to the risk decisions taken in relation to banks' credit portfolios.

expected losses instead of incurred losses. As we have seen, this was already proposed by the BIS at the turn of the millennium.

The Banco de España took every opportunity to explain the logic and operation of countercyclical provisions. At the highest level, the first explanation at international level of the new Spanish countercyclical provision was given by the current Governor of the Banco de España, Luis Linde, at the end of November 2000 at a G10 meeting in Paris, to which Spain had been invited. Another good example of this is the speech of the then Governor of the Banco de España, Caruana (2002), delivered at the conference organised jointly by the Federal Reserve Bank of Chicago and the World Bank on *Asset Price Bubbles: The Implication for Monetary, Regulatory, and International Policies* in April 2002. This was an ideal setting to explain the countercyclical instrument, which had then been in operation for almost two years, as the participants in this conference included central bankers, regulators and academics. The final paragraph of this speech is very relevant as it highlights the insufficiency of a countercyclical regulatory instrument if it is not accompanied by a responsible attitude on the part of bank management: "Let me finish by adding a word of caution. Regulatory devices per se do not suffice to attain a safe and sound banking system. A proper risk management culture deeply ingrained in banks is also a necessary condition to reach that goal. Consequently, banks and regulators should work hand in hand to improve financial stability".

Notable among the supervisors who showed most interest in countercyclical provisions were the French, with whom the Banco de España held some working meetings to explain the content of the provision and to join forces to promote its introduction beyond the Pyrenees. These efforts did not result in any change at international level, where the resistance of accounting regulators to forward-looking provisions based on expected losses, as suggested by the BIS, and as were being applied by the Banco de España, was clear. The Banque de France attempted to develop a similar countercyclical provisioning system[18] based on comparison between the expected loss on a transaction (obtained using an internal bank model) and its risk premium, in such a way that provisions increased as the expected loss exceeded the risk premium.

Their idea, prompted by a concern that risk premia are too low during expansions, was intended to be more in line with accounting language. However, this proposal was not countercyclical because expected losses based on internal models usually increase during or just before recessions, so that at best provisions would only anticipate the crisis slightly. During

18 See Jaudoin (2001) for a general reflection on dynamic provisions.

expansions the risk premium, which is constant for each loan and fixed in advance, could exceed the expected loss, in which case no provisions would be made. Only if risk premia are considered variable over the cycle and in aggregate for a homogeneous group of exposures, may a lower cyclical variability than for the expected loss be obtained and a more countercyclical provision achieved. However the system was rather complex and difficult to estimate and, therefore, to supervise. The truth is that it was not easy to design an alternative countercyclical provision system to that of the Banco de España, which was so simple, mechanical, intuitive and effective.

Risk premium and market value of loans

Note that the underestimation of credit risk (inadequate risk premia) is another factor in favour of statistical or countercyclical provisions. In the case of banks the argument is even more relevant given that economic booms and strong credit growth are usually accompanied by a relaxation of credit standards. That is to say, during expansions, when banks compete intensely to maintain or increase their market share, they may overlend, with less collateral or guarantees, at longer maturities and, especially, at interest rates that do not fully reflect the risk premium involved.

During a credit cycle upswing it is not at all unusual to see loans granted at interest rates that are so low they do not cover the average risk premium over the credit cycle, although they may cover the risk premium of short-term transactions at the time they are granted. For example, variable rate mortgages at Euribor plus 30 basis points, resulting from intense competition between banks, may be appropriate for mortgage loans for house purchase at a time when there are barely any non-performing mortgage loans, but, since these transactions usually have a very long maturity (25 years), it is very difficult to maintain on historical evidence that mortgage defaults are not going to increase in the future, when the economy slows or moves into recession, and therefore that this interest rate adequately reflects the risk over the whole life of the loan.

During an upswing like the one described, banks grant a very high number of loans, partly because credit risk (the risk premium) is mispriced, and because there are barely any non-performing loans. This leads to strong growth in the bank's financial revenues and profits, which may in turn contribute to a generous dividend policy. However, the risk is already on the bank's balance sheet, even though there is no item recording it in the accounting statements: provisions are low, as are non-performing assets, while the risk premium, which forms part of the cost of the loan, is not recorded as a cost as it has not yet been incurred.

All these factors together (revenue growth, undervaluation of risk, mismatching of revenues and expenses and over-generous distributions of earnings), which may not be obvious to external investors, tend to bring about decapitalisation of the bank (relative to the desired level of capitalisation from the viewpoint of a complete business cycle) and increase its financial fragility, destroying the true and fair view of the bank. This has quite the opposite effect to investor protection, the objective that accounting regulators and authorities claim to defend.

In addition there is a subtle factor, although its subtlety makes it no less perverse in this situation, that is particularly relevant for banks owing to their very high leverage (debt-to-capital ratios of around 20, well above those of non-financial businesses, which mostly have ratios of 1-2). This is the incentive that inadequate recording of credit risk generates for bank management, especially if their variable remuneration is significant and linked to accounting profit, as has tended to be the case, in particular for unlisted institutions (savings banks). Profits (and bonuses) that grow as lending increases, because the risk premium incorporated into the cost of the transaction is not reflected in the calculation of profit for the period, may give rise to misperception of the true profit of the business and lead to excessive risk assumption. The lack of coverage of the expected loss increases the incentives to develop a business model that is dangerous in the medium term: lending more and more to real estate developers, and later on granting mortgages at very low rates, which increases the bank's short-term profit but also its risk. Strong competition among banks may drive out more prudent management and banks which, aware that the risk premium is inadequate, moderate remuneration levels and dividend distributions in line with an economic profit that is below the accounting profit (see Section 1.3).

Excessive optimism during upswings not only takes the form of excessive lending growth, in terms of amounts, but also leads to an often inseparable reduction in risk premia and lower interest rates, further fuelling the demand for credit. The Spanish statistical provision corrects for the undervaluation of risk that occurs during expansions, requiring banks to record provisions to reflect the loss in value of the loans they grant during that phase. The underestimation of credit risk during expansions is usually matched by an overestimate during recessions, when the reduction in amounts is accompanied by a substantial increase in prices.[19]

If the credit risk premia applied by banks during the cycle do not appropriately reflect such risk, it is difficult to argue that market prices (the interest rates banks charge on loans) can

19 The symmetry in the Spanish countercyclical provisions means that this overvaluation is also corrected for.

be used to value such assets. Consequently, it is difficult to justify full fair value accounting for banks.[20] The accounting paradigm works if markets price risk appropriately throughout the cycle. If markets and the agents operating in them persistently deviate, for whatever reason, financial information may be distorted and increase financial fragility. The recent crisis shows that distortions in the pricing of credit risk may be substantial and lasting. As mentioned above, this poses a problem for the application of full fair value accounting in the banking sector.

One of the main criticisms of this extreme system of valuation of all types of assets, whether or not they have a liquid secondary market, is precisely the procyclicality it may introduce. Upswings would be reinforced by underestimated risk premia that increase the value of banks' loans and capital, giving them greater scope to continue expanding their credit portfolios. Moreover, the volatility of the income statement and of capital would increase, exacerbating the instability of the financial system.

Borio and Lowe (2001) acknowledge these arguments, favouring more forward-looking provisions, which allow credit risk to be covered earlier in the cycle. They criticise backward-looking provisions, defended by the accounting and securities authorities.[21] Indeed, if risk premia underestimate the risk at the time of origination, then provisions made at the time the loan is granted, an aspect of the Spanish system of provisions that has traditionally been criticised, are justified. The opposition of accounting regulators leads the two above-mentioned authors to tentatively suggest that the countercyclical provisions calculated could be added to capital, without any impact on the income statement. With the arrival of the crisis, this proposal was made again in a somewhat more elaborate form.

More international regulatory and supervisory interest

The first half of the initial decade of the third millennium was a time of intellectual ferment in the regulatory and supervisory world. The imminent introduction of IAS 39, the international standard on loan loss provisions, and the appearance of Spanish countercyclical provisions animated a debate traditionally dominated by accounting authorities, inviting central bank economists and bank supervisors concerned about financial stability to join in too. This was

20 An excellent discussion of the advantages and disadvantages of full fair value accounting can be found in Jackson and Lodge (2000). Deutsche Bundesbank (2002) compares the German standard with the US one, indicating substantial differences.

21 Borio (2003), in one of the seminal papers on macroprudential policy, insists on the need for forward-looking provisions, although he recognises the difficulty of agreeing on a single proposal.

the background to the discussions mentioned above on full fair value, forward-looking provisions, the limitations of provisions based on incurred losses (backward-looking provisions) and, also, Spanish countercyclical provisions.

A fundamental idea, underlying all these debates, is expounded in Crockett (2000), probably the most quoted speech in the macroprudential area, and considered the origin of this approach among supervisory authorities, although not of the use of the word macroprudential. He says: "The received wisdom is that risk increases in recessions and falls in booms. In contrast, it may be more helpful to think of risk as increasing during upswings, as financial imbalances build up, and materialising in recessions". It is difficult to find a better incentive to work on countercyclical macroprudential mechanisms or a better justification for Spanish statistical, countercyclical or dynamic provisions. *Risk increasing in upswings* refers to the easing of credit standards, lax lending policies, including insufficient risk premia, along with the negative externalities that this may give rise to. In fact, Crockett's speech also contained a nod to the recently introduced Spanish statistical provisions.

Interest was also shown in the new Spanish countercyclical provisions by other central banks and supervisors. The Bank of England, through Patricia Jackson, then one of the main supporters and negotiators of the process that would ultimately lead to the approval of Basel 2, concerned by the procyclicality of capital requirements and accounting standards, invited the Banco de España to present its system of provisions at a seminar that aroused great interest and debate.

At the beginning of 2003, the Italian Banking Association invited the Banco de España, in the presence of its supervisor and some of the best-known Italian academic banking economists, to present and discuss its system of provisions, at a time of lively discussion of the accounting for credit risk provisions. Italian banks were not overly enthusiastic about the Spanish system of provisions, although this was to be expected as already explained in the Spanish case.

In 2004, the central bank of Slovenia expressed great interest in the Spanish system of countercyclical provisions. It was concerned about strong credit growth, procyclicality and the possible future impact of these developments on its banks. The Banco de España offered immediate collaboration with its technical questions regarding their introduction (parameter estimation, calibration, homogeneous risk group definition, etc.) and also helped them to spread the idea of countercyclical provisions among Slovenian banks.

While it is not the intention to offer a comprehensive list of interactions with other supervisory authorities, the interest of the People's Bank of China (China's central bank) in Spanish

countercyclical provisions in the spring of 2004 is nonetheless also worth recording. At the time, bank lending was also growing strongly in that country.

Also notable was the interest at the highest level of the Banco de la República (the central bank of Colombia) in a system of countercyclical provisions like Spain's, which was much simpler than the system the Colombian bank supervisor was launching. The interaction with the central bank and the bank supervisor was very interesting conceptually (the use, or not, of banks' own internal credit risk models, the role of transition matrices between different credit quality levels, etc.). However, what was in fact most gratifying at the institutional level was that the prudential instrument that the Banco de España had invented at the turn of the millennium was taking root in other countries and, at the same time, was adopting other forms adapted to banking systems with different features but the same problem, i.e. procyclical lending and its potentially damaging impact on the banking system.[22]

Finally, the prolonged interest of the Financial Stability Institute (FSI), a BIS agency dedicated to spreading best banking supervisory practices and transmitting BCBS developments beyond its members to the distant outposts of the world, should be noted and is sincerely appreciated. The FSI constantly offered the Banco de España a platform to explain countercyclical provisions to numerous groups of world supervisors, in Basel, Eastern Europe, the Middle East, Asia and, in particular, Latin America. It was thus possible to explain the Spanish system of loan loss provisions to the banking supervisors of numerous countries with problems and dilemmas very similar to our own. And these nations sometimes expressed further interest bilaterally, contributing to the spread of what the Banco de España always considered a sound practice to bolster financial stability.[23]

Academic interest in Spanish countercyclical provisions

Hardly any interest in this new regulatory instrument was shown by academic circles, with the notable exception of the Financial Markets Group of the London School of Economics (LSE), where Charles Goodhart, a former member of the Monetary Policy Committee of the

22 Colombia and its authorities are an example of early and extensive macroprudential policy that has proved its effectiveness. For a succinct description of the measures, their thrust and their impact, see J Uribe (2008), the architect of many of these measures.

23 The FSI has performed much dissemination and training work over the years, which is sometimes not sufficiently acknowledged. With a small team of outstanding professionals it has managed to exert an influence on banking supervisors practically worldwide, far beyond the BCBS member countries.

Bank of England and a distinguished and influential economist, was concerned about the procyclicality of financial markets and the possible impact on banking crises. His invitation to present dynamic provisions in London, together with that of Philip Davis, another early enthusiast for countercyclical provisions as a macroprudential tool, was an opportunity to open a channel of communication with the academic world, which was then showing little concern for the interrelatedness of financial and business cycles and of monetary and regulatory policy.

At that time, the study of banks, their behaviour and their impact on the real economy was not one of the main avenues of research, as reflected in the main international academic journals. Macroeconomists were interested in perfecting their dynamic stochastic general equilibrium (DSGE) models, in which there was no credit risk, no banks and no financial stability to be safeguarded, while financial economists were largely preoccupied with their asset pricing models. This was the time of the Great Moderation and, one might add, the Great Complacency. The international financial crisis that broke in 2007 and worsened in 2008 drastically changed the priorities of analysts. Thus, the leading general and specialised journals began to publish papers on banking, credit cycles and macroprudential instruments, allowing the developments in banking systems, financial markets and the real economy to be understood. In addition, financial frictions began to be introduced into DSGE models in order to increase their usefulness for understanding what was happening in the real world.

1.3 Modification of countercyclical provisions due to the arrival of International Accounting Standards (IAS)

The EU regulation requiring all institutions whose securities are listed on a regulated market of any EU Member State to prepare and present their consolidated financial statements in conformity with International Accounting Standards came into force on 1 January 2005. The Banco de España, by means of Accounting Circular 4/2004, adopted this regulation and adapted it to Spanish law for both consolidated and individual financial statements. In short, accounting standards in Spain had to be consistent with IAS from 1 January 2005.

The change was notable, especially for a country like Spain where the banking supervisor, with the prior approval of the Spanish Institute of Accounting and Auditing, had the power to set accounting standards for the banks it supervised. IAS put the emphasis on financial reporting being useful for investors, while the previous accounting regulations (Accounting Circular CBE 4/1991) put the emphasis on protection of external funds deposited with insti-

tutions.[24] Arguably, then, under European legislation prudent valuation, which had always been the guiding principle of accounting regulations in Spain, was a secondary consideration. As a result, IAS were received with some scepticism by the advocates of the countercyclical provision and with enthusiasm, in some cases barely concealed, by banks and most accounting regulators.

IAS permit two types of loan loss provisions. The first, which we can consider equivalent to specific provisions, is oriented to covering incurred losses identified in a credit transaction, i.e. provisions to cover the impairment of a specific loan. The second type is a general system and allows incurred losses to be covered even though the specific transaction to which they relate has not yet been identified. These provisions are applied to homogeneous risk groups. In other words, IAS recognise that in a homogeneous portfolio (e.g. credit cards) at any specific time there may already be incurred losses although it is still not known which specific loan they correspond to. IAS recognise the statistical nature of credit risk, considering that there is a very high probability that in a loan portfolio a certain percentage of loss will occur, although it cannot easily be attributed to particular transactions. In any case, IAS maintain the term incurred loss, which means that provisions can only be made when there is objective evidence of impairment. In the absence of such evidence, it is not possible to provision. In short, these provisions are backward-looking, not forward-looking.

Clearly, the concept of incurred loss made it extremely difficult to maintain statistical provisions as they were then formulated. Incurred losses are very procyclical; they are low during upswings, when there are hardly any NPLs, and they grow significantly during recessions. The statistical provision, by contrast, resulted in an annual provision that remained almost completely constant over the cycle. This characteristic was precisely the target of accounting regulators' criticisms, while the statistical provision was in force; a total provision that was practically constant from year to year did not reflect the concept of incurred loss.

The imminent application of IAS in Spain raised the hopes of the banks that countercyclical provisions would be abolished. As will be seen in Chapter 3, these provisions were taking 15%-20% of net operating income each year to create a stock of loan loss provisions that in 2004 appeared to them unlikely ever to be fully used in the future. Once again the banks put their machinery for pressurising the regulator into operation, arguing that EU regulations

24 A detailed analysis of the impact of CBE 4/2004 on the balance sheet and income statement of Spanish deposit institutions can be found in Pérez (2006).

were mandatory, that the countercyclical provision would be impossible to defend within the framework of IAS and, therefore, that it should be abolished.[25]

This pressure did have some effect. There was hardly a single accountant in favour of countercyclical provisions (Poveda and Prado had already retired by this stage), while supervisors fell prey to a certain fatalism: nothing could be done to prevent the abolition of the countercyclical provision. The opinion that this provision had been a great invention but, unfortunately, could not be maintained became ever more widely held, even at the Banco de España.

These discussions were taking place at a most particular juncture in the credit and business cycle. GDP, over the rough patch of 2002, grew strongly again in 2004. Credit accelerated further at real rates of over 10%, approaching the highest rates since the 1970s. In addition, in the housing market prices continued to grow at double-digit rates and credit to real estate developers started to accelerate again. In short, Spain and the Spanish banking sector were at an extremely expansionary stage in the cycle, which was more intense than that at the end of the 1980s and early 1990s, with negative real interest rates for the first time in a quarter of a century.

Intense credit growth, in particular associated with the real estate sector, has always had negative consequences for the banking sector and for the Spanish economy as a whole. This was the case in the credit expansion at the beginning of the 1960s and in that at the end of the 1980s, and all the signs were that it could happen again. In addition, the experience of supervisors was that lending policy errors were always committed during booms, when lenders and borrowers were generally optimistic and credit conditions were relaxed given the absence of doubtful loans. Though hard to believe now after a brutal economic crisis, the prevalent feeling at the time, not only in the banking sector but in the country and society as a whole, was one of collective euphoria.[26]

Among the most widespread beliefs was that the adoption of the euro had changed the restrictions faced by the Spanish economy forever: permanently lower interest rates, cur-

25 *Cinco Días* led with the headline "The Spanish Banking Association calls on Caruana to soften precautionary provisions" on 20 May 2004, followed, on 21 May, by *Expansión* with "Provisions upsetting the sector". On 24 June 2004, *El Mundo* led with "Solbes advocates keeping bank provisions for times of crisis", followed by "Spanish banks wary of measure as they say it leaves them at a disadvantage to their European peers".

26 Bénabou (2009) and Foote et al. (2012), among others, analyse the role of collective delusions, groupthink and the mistaken beliefs of lenders and borrowers about the emergence (or not) of crises. Haldane (2014) considers that the separation between monetary, macroprudential and microprudential policy helps to protect against collective delusions.

rent account imbalances that could be financed without difficulty, an increase in debt that posed no sustainability problems; in short, the disappearance of the traditional growth constraints. This was the time when Spain was absorbing a growing flow of migrants without difficulty, fuelling a flow of construction of first and second residences unparalleled in Europe.

It was precisely against this background that the Banco de España had to decide whether to maintain its countercyclical provision, i.e. whether to return to the banking sector what had been built up over the last four years, which was slightly less than 1% of the credit protfolio. Everything favoured this return: IAS, accounting regulators, banks, the seemingly endless economic boom and the absence of NPLs which meant that coverage ratios were around 300%, and over 700% at some institutions, when the normal coverage of NPLs tended to be around 50%. The pressures were not easy to withstand.

However, the Banco de España decided not to abandon the countercyclical provision. That is to say, it agreed not to allow the provision stock built up to be run down, which would have entailed a signal that would have further stimulated the upswing. Thus, the letter from Deputy Governor Gonzalo Gil to the managing directors of Spanish banks in spring 2004 left no doubt regarding the Banco de España's intention to continue its policy of prudence in relation to provisions and their compatibility with the international accounting standards due to enter into force in 2005.

The change in analysts' perceptions regarding the provisions further to the change in international standards is striking. For instance, on 15 September 2003 in a report on Spanish banks, Lehman Brothers Equity Research stated: "We expect the adoption of IFRS to be positive for Spain in both absolute terms and relative to its EU peers. The Spanish banks' traditional conservativeness, which has driven greater provisioning of loan losses and contingencies, should end". A year later, the same analyst in the same firm recognised: "The message is clear: IAS will not benefit underlying earnings materially, as we once thought, with the Bank of Spain having found flexibility in the implementation to maintain its conservative accounting".[27]

It was obviously necessary to adapt the provisions to make them compatible with IAS. The instructions of Governor Caruana were quite clear: to design a new countercyclical provision that would allow barely any of the stock built up to date to be released, would cause provi-

27 The use of the word "positive" in 2003 will not have escaped the reader. The short-termism revealed by this expression, and by the phrase used a year later, is rather striking.

sions to continue to be built up during the upswing and that would allow them to be released during the recession. And furthermore this design had to be compatible with IAS! This was not an easy task because IAS do not explicitly envisage provisions that behave countercyclically. As mentioned above, incurred losses are very closely (negatively) correlated with the business cycle.

The new mechanism designed after 2005 is explained in detail in the following chapter. Essentially, the homogeneous risk groups, permissible under IAS, were maintained; the statistical component, which was not compatible with IAS, was eliminated; only the specific and general provisions were maintained, but the general component was transformed to enable it to behave countercyclically, without the provisions becoming totally constant over the cycle, which was the main objection of the accounting regulators.

The new general provision, as the former statistical provision was then called, was parameterised in such a way that banks had to maintain at all times a component known as alpha (α) calibrated to avoid the release of provisions that had already been built up and, in addition, a component beta (β) that made the provision countercyclical. Beta is the average provision over the credit cycle, which is compared with the specific provision for the period. During upswings, with few NPLs, specific provisions are very low and the difference with respect to the average provision over the cycle (the beta component) is positive, so that provisions are built up. During recessions the opposite occurs, and provisions are released. Thus, general provisions are built up during upswings and run down, or released, during recessions, shoring up banks' income statements and own funds, and helping to avoid a sudden reduction in bank lending, which would exacerbate the recession.

The re-parameterisation of the provisions achieved a countercylical profile, but with greater sensitivity to the cycle than with the former statistical provisions.[28] Thus, more provisions were built up during the upswing than would have been the case with the traditional specific and general provisions and, as a result, increases in provisions during recessions would not be so sudden. In fact, provisions were made more "forward-looking", to use Borio's terminology. At the same time, an upper limit was placed on the build-up of provisions, to facilitate their acceptance, and a minimum level was introduced for the general provision stock (later abandoned), that had to be maintained even during recessions.

The alpha and beta parameters varied from one homogeneous risk group to another. There were six groups, practically identical to the six groups identified by the statistical provi-

28 This issue is explained in detail in Chapter 2.

sions. Indeed, the aim was to ensure that the change from the previous system was as small as possible, to avoid discontinuities and unnecessary complications. The second component of the general provisions, the countercyclical one, was difficult to fit into the IAS framework, but the fact that it was incorporated into the general provision made its consistency with the new accounting framework easier to defend.

Finally, it must be noted that auditors were comfortable with regulations that maintained a higher level of prudent valuation imposed by the banking supervisor.

Income smoothing

Apart from being critical of the recording of practically constant provisions over time, accounting regulators and some analysts and supervisors customarily made another, more incisive, criticism whenever countercyclical provisions were presented or discussed. Countercyclical provisions were considered to actually constitute a manipulation of accounting income. Thus, in the eyes of these critics, countercyclical provisions were no more than a mechanism for smoothing income over time.

This income smoothing is usually explained as the intended result of business managers' efforts to maximise the likelihood that they will keep their jobs. The idea behind this is that in good times managers seek to build up assorted buffers here and there by trimming profits and artificially inflating expense items. The buffers can then be used in bad times to improve the firm's profits and so minimise the likelihood that shareholders will find reasons to dismiss those managers. This behaviour is contrary to the principles defended by accounting regulators and securities market supervisors entrusted with ensuring that a firm is always fairly represented by its accounting statements. Thus, if a firm is highly profitable in a boom period, this should be clearly reflected in its income statement, without building up buffers which lie latent in the firm for future use. Symmetrically, in bad times the accounts should crudely reflect a firm's position without any propping up by buffers previously accumulated by the managers.

This posture, while absolutely legitimate, has some major weaknesses. Firstly, strong accounting results today may reflect not good management but rather a one-off favourable economic conjuncture external to the firm that is unsustainable over time. Fully reflecting that situation in the firm's accounting results may give rise to the firm making an excessive dividend distribution instead of taking advantage of the opportunity to strengthen its solvency and own funds. When the environment changes, the stakeholders may not wish or be able to shore up the firm and it may fail, whereas the judicious

construction of buffers in the boom time might have prevented this irreversible outcome.

Therefore, it is not surprising that prudent managers, particularly those of firms as strongly indebted or leveraged as banks, have historically built up buffers of funds which remain within the bank for use in the event of substantial deterioration of the environment or the firm's position. The empirical evidence at both national and international level is extremely eloquent in this respect. Scarcely a quarter goes by without the three or four major international accounting journals publishing a rigourous study reporting solid empirical evidence of income smoothing. Banks do this by using credit loss provisions or otherwise by means of extraordinary expenses or depreciation items.[29] Naturally this evidence extends beyond the banking sector to nearly all business areas,[30] which suggests that there is a notable contrast between accounting theory and empirical evidence.

This possibility of using credit loss provisions, or even extraordinary income or other similar items, is not something discovered recently thanks to advances in econometric techniques, but rather has its roots in banking analysis. In this respect, Martínez Méndez (1991) found signs of opportunistic behaviour in the preparation of accounting statements by banks, and Saurina (1999) reported empirical evidence of the same conduct in savings banks in Spain.

A theoretical rationale of income smoothing by company managers based on agency theory is given by Fudenberg and Tirole (1995), who consider that income smoothing by managers seeks to avoid external interference in firms' decisions or to preserve their jobs. Other explanations of income smoothing are signalling by managers (Barnea et al. (1975)), a desire to reduce taxes (Collins et al. (1995) or Rozycki (1997)), the provision of liquidity to shareholders (Goel and Thakor (2003)), or reduction of the perceived likelihood of bankruptcy (Trueman and Titman (1988)).[31]

29 Another variant, although acting in the opposite direction to income smoothing, is known in this literature by the term *big bath*. It usually consists in recording a high loss when management of the bank or non-financial corporation changes (see, for example, for the case of German savings banks, Bornemann et al. (2015), and the references cited therein), whereby the new manager writes off all the losses in the first year to establish a solid basis on which to be assessed in the future.

30 See, for example, Liu and Ryan (2006) and the references cited therein.

31 Readers will have realised that this issue is not a minor one at the analytical level, having historically attracted the interest of a recent Nobel Prize winner and of one of the most prestigious economic journals. Nor is it a minor issue at the practical level because of its implications for the assessment of the performance of business managers, their remuneration and the behaviour of firms.

Against this backdrop, Spanish countercyclical provisions, both in their statistical version and in their extended general version from 2005 onwards, seem to be an appropriate tool for prudential supervision. This is largely due to the mechanism for setting these provisions, which is practically automatic, difficult to manipulate, easily supervised and based on transparent calculation methods allowing the impact of countercyclical provisions on the income statement to be measured continuously, therefore precluding any suspicion of manipulation of these accounts.

Obviously, countercyclical provisions, practically by definition, result in some income smoothing in the income statement, but the transparent way in which they do so invalidates any criticism alleging manipulation of accounting profit. Furthermore, should there be any doubt, the Spanish authorities oblige banks to report countercyclical provisions separately in their confidential information returns submitted to the supervisor.

It is worth reiterating that countercyclical provisions provide a means of satisfying the wishes of those prudent managers who in boom times prefer to build up buffers to better withstand the more complicated phases which their experience tells them will reappear. And they allow this to be done in a manner which is transparent to the market and to investors. This is fully confirmed by the available empirical evidence. Thus Pérez et al. (2008) show that, before countercyclical provisions were implemented, Spanish banks used existing provisions and extraordinary items to smooth income. Since the introduction of countercyclical provisions, income smoothing has practically disappeared, precisely because it can be done transparently using these new provisions.[32]

In view of the above theoretical and empirical discussion on income smoothing, it is hard to understand the opposition that a good part of the accounting profession both in Spain and abroad have shown to countercyclical provisions, which contribute so much to the fair representation of banks and to prudent valuation, reflecting in the most appropriate manner the credit risk assumed by banks at any given time. In other words, the support of accounting doctrine for a provisioning system based on incurred losses which, as shown repeatedly by empirical evidence, is often conveniently altered to smooth income, is beyond comprehension.

32 Pérez et al. (2008) use information on the statistical provision in its early years. The extension of the sampling period to end-2004 in Pérez et al. (2010) strengthens the previous findings, confirming the disappearance of income smoothing thanks to statistical provisions and consequently underpinning the fairness of the income statement's representation.

Provisions and capital

Pérez et al. (2008) also shed light on whether or not provisions and capital are substitutes. Historically, this issue has attracted much interest in the accounting literature (see Moyer (1990), Beatty et al. (1995), Collins et al. (1995), Kim and Kross (1998) or Ahmed et al. (1999)). Recently, Beatty and Liao (2014)[33] reviewed the literature on the discretional nature of accounting information at banks and its interaction with regulatory capital and earnings management, proposing a new methodology for cross-checking purposes. Theoretically, the possibility of substitution between provisions and capital arises when provisions are considered not as an adjustment to the value of bank assets (as with loan loss provisions) but rather from the viewpoint of the ownership and possible distribution of the accumulated loan loss provision stock in the event that the institution is liquidated. If that happens, all borrowed funds, including deposits, senior and subordinated debt and holdings or preference shares will be claimed from the bank. The remainder will be distributed to the shareholders. Since there are no debtors or other third parties to claim the provisions built up, these are similar in nature to capital and reserves during the institution's liquidation phase.[34]

In practice, there would not be much purpose in requiring additional provisions of banks if, at the same time, they reduced regulatory capital for the same level of risk, offsetting the increase in one with the decrease in the other. Following the standard procedure for testing for potential substitutability between provisions and capital in the empirical accounting literature, the above-mentioned work of Pérez et al. (2008) rejects this hypothesis in the case of Spain. The relationship between provisions and capital only exists contemporaneously, as would be expected, as a result of the accounting connection between provisions, accounting profit and own funds, but not at a strategic level. This is also true for both broad and narrow definitions of regulatory own funds. In other words, Spanish banks would not appear to have offset the higher countercyclical provisioning requirements with lower regulatory capital levels, possibly because in truth they considered that this asset value adjustment was necessary.

33 This work also addresses the procyclicality of banks' loan loss provisions and of fair value. As regards the former, the early work of Laeven and Majnoni (2003) should be noted.

34 In Martínez Méndez's work (1991) the definition of banks' own funds includes loan loss provisions because he does not consider that there is a sufficiently clear distinction between capital and reserves on the one hand and provisions on the other, since these three items are used to absorb losses. The favourable tax treatment of specific provisions, in a context of high interest rates such as that analysed by the author, is another element that would favour loan loss provisions over reserves. This approach has profound implications for analysis of the profitability of banks, but it was not a majority approach at the Banco de España at that time.

Despite a widespread lack of understanding (see, for example, footnote 10 in this chapter), the Banco de España changed the statistical provision to adapt it to IAS, thereby ensuring that banks continued to build up funds to be able to protect themselves from swings in the credit cycle, at a time when practically everyone had forgotten that such swings were possible, lulled by the continually improving economic situation and blind to the accumulation of risks and imbalances that would materialise years later.[35] A former Chair of the US Federal Reserve coined a mythical phrase on the role of central bankers, also applicable to banking supervisors.[36]

In the face of widespread indifference and lack of understanding, and even outright opposition, by maintaining countercyclical provisions despite the arrival of IAS, the Banco de España contributed to reducing the flow of liquidity to a certain extent. As shown later on, there was too much liquidity in the Spanish economy; indeed it was pouring in from the outside through mortgage portfolio securitisations, against a backdrop in which the ECB's monetary policy was very lax for Spain, albeit not so for the euro area as whole.[37]

During the process of recalibrating the countercyclical provision, the urgency of having an alternative provisioning system to replace it when IAS came into force prevailed over a more profound and calmer theoretical and empirical reflection on its justification. The idea behind regulatory policy decisions was clear and justifying the proposal additionally was not considered necessary. However, having solved the most immediate priority of replacing the provisioning system so that it would be in line with IAS and would continue to produce a positive and substantial flow of provisions, the Banco de España made an effort to substantiate its economic and supervisory rationale, justifying its creation and maintenance, as explained below.

Justification of countercyclical provisions

Jiménez and Saurina (2006) summarise the theoretical and empirical arguments on the need for countercyclical provisions and include a general proposal on how to implement them which, additionally, is similar in its key aspects to the countercyclical capital buffer that

35 Caruana (2010) notes that operating a countercyclical buffer requires a will to act that is not always present or is not easy to find, particularly if the measure is subject to technical criticism, has a substantial impact on institutions, which leads to open rejection, is surrounded by uncertainty (too soon or too late, calibration, etc.) and is not easy to communicate due to the signalling effect it entails.

36 "The job of the Federal Reserve is to take away the punch bowl just as the party gets going", William McChesney Martin, Chair of the Federal Reserve Board from 1951 to 1970.

37 For a more detailed discussion of this matter focusing on the role of securitisation in, and its impact on, the credit cycle, see Almazán et al. (2015). Estrada and Saurina (2016) offer a broader view, with reference to different policies adopted in the monetary, fiscal and banking realm.

would subsequently be implemented under Basel 3. The paper reviews the arguments which had allowed bankers to expand credit excessively, cycle after cycle, stumbling over the same stone time and again and with negative, sometimes even catastrophic, consequences for the economy. Indeed, many of these arguments were already present in seminal papers of the BIS in the mid-1990s[38] that were at the root of macroprudential instruments and policies, as mentioned earlier in Section 1.2.

In essence, bankers expand credit in excess because they have disaster myopia (Guttentag and Herring (1984)). This reflects their almost exclusive concern for the short term, probably in response to the monetary incentives they face. It is reinforced by a tendency to engage in herd behaviour, whereby bankers prefer to make mistakes together rather than swim against the tide (Rajan (1994)). In an expansionary setting where banks are fighting to maintain or increase their market share, more conservative bankers find it increasingly difficult to explain why, when there is hardly any non-performing loan at any bank, they refuse to grant loans for better risk quality purposes while other competitors accept them.

Narrow time horizons and short-termism can also be traps for bank shareholders. Even the most conservative and experienced bankers can sometimes be tempted to accept credit growth with lower credit standards, sometimes in order to keep their jobs. Managers have to have very consolidated careers to be able to explain, year after year, to their shareholders that they are losing market share because they prefer to be cautious, and not lose their jobs. Any moderately elaborate excuse may be used to remove a cautious manager during an expansionary phase: inability to identify a change in the banking model, or new times affecting the business, or even structural changes in the Spanish economy. However, when the cycle turns, managers who behave like the rest of the herd can always point to other banks, which are also undergoing difficulties, to justify their results (and increase their chance of survival at the bank) in the downturn.

Other theories that justify excessive credit growth relate to banks' goals and who defines them. Where ownership is highly dispersed or shareholders have difficulties or lack incentives to acquire in-depth knowledge of the institution, or where there are simply no shareholders, it is not difficult to imagine that bank managers are the true owners (in the sense of those taking significant decisions). Once minimum capital returns and smooth dividend flows are assured, ensuring that annual general meetings will be calm, managers can devote the remaining resources of the bank to satisfying their own utility function, where their personal remuneration, social status or influence can become key objectives, all more or less directly

38 See, for example, Crockett (1997).

aligned with bank size. Rapid credit expansion, increasing bank size, would give them more social visibility and higher earnings (Williamson (1963)).

Theories that question the traditional paradigm of relationships between principal and agent in firms are not new. They have been expressed in different ways over time (expense preference, empire building, etc.),[39] but they all have something in common: it is management that control banks. This would explain their interest in minimising bank capital: the lower the capital, the greater the cash flow available for management remuneration or for growth projects. Regulatory capital would be just one more input, similar to human, physical, commercial and technological capital, necessary to conduct business.[40] The case of the excessive growth of Spanish savings banks, among other institutions, seems to fit perfectly into this new shareholder-manager or principal-agent paradigm. Saurina and Shin (2012) propose a model, supported by empirical evidence from Spain, in which bank managers act as principals, aiming to maximise their part of the gross income generated by the bank, subject to the constraint of a minimum share for the shareholders.[41]

Finally, another theory that explains why banks systematically and repeatedly make mistakes in the credit cycle is the institutional memory (or rather, lack of memory) hypothesis (Berger and Udell (2004)). According to these authors, lending policies become more lenient during expansionary phases because the generation of bankers who were active at the time of the last crisis (and, therefore, who remember well the errors made) either begins to forget those errors, or retires and is replaced by a new generation who did not experience the previous credit boom or bust. This generation is unaware of the errors made and, accordingly, is ready to make mistakes again. They will tend to think that things will be different this time and that they will not make the mistakes of the past. This is the banking version of Reinhart and Rogoff's "This time is different" (2009).

Be that as it may, whether for any of the foregoing reasons, for a combination of any of them or for all of them jointly and simultaneously, lending policy errors tend to be repeated over time. Risk acceptance and loan origination standards become more lax during upturns, leading to the next crisis, which may be more or less severe depending on the magnitude and

39 See Edwards (1977), Hannan and Mavinga (1980), Mester (1989) and Esty (1997).

40 However, should management wish to minimise their human capital risk, which is largely linked to bank performance, they might prefer more capital and less balance sheet growth.

41 This unpublished paper also shows preliminary but robust empirical evidence that without countercyclical provisions credit expansion during the first half of the past decade would have been even greater and its effects probably even more devastating. The analysis is very similar to that used by Peek and Rosengren (1995). These unpublished results are reasonably in line with those obtained by Jiménez et al. (2016) using a much more precise methodology in econometric terms.

duration of the decline in standards, the degree of keen vigilance by microprudential supervisors and the economic background at the time. The perception that lending policy errors are made during upturns is widely shared by supervisors, although empirical documentation is surprisingly scant.

Jiménez and Saurina (2006) documented this rigorously for the case of Spain. First they obtained evidence of a significant positive lagged relationship between rapid credit growth and future non-performing loans, such that very rapid credit growth today is correlated with increased non-performing loans three or four years later. The fact that the relationship is not contemporaneous evidences the importance of monitoring credit standards and their possible future impact, since more credit today will almost automatically translate into lower NPL ratios and, accordingly, little or no need for specific provisioning, but the risk immediately begins to build up in the bank's balance sheet.

Additionally, they find robust evidence that loans granted during upturns have a higher probability of default, two, three or four years later, than loans granted during downturns. In other words, banks ease their credit selection standards in good times and tighten them in bad times, so that lending policy errors are made in the upswing, granting more loans to those likely to default. In the downswing, hardly any loans are granted as a result of the credit crunch and, therefore, few mistakes are made.

This gives rise to high credit volatility which passes through to the real economy, with excessive expansion during the upturn and a very marked slowdown during the downturn, with the consequent negative social consequences. Less volatile changes in credit would give rise to a more stable economy, accompanied by improvements in social welfare, as the use of the stabilising mechanism of monetary and fiscal policy has demonstrated over time and in numerous countries.

Lastly, the above-mentioned paper shows that collateral requirements also change with the cycle. Thus, less collateral is required in times of rapid credit growth and more in times of deceleration. The paper therefore provides further evidence that credit standards are lower in periods of high credit growth. Moreover, it seems very reasonable to consider, although this is not evidenced in the paper owing to a lack of information, that the easing of credit standards also extends to the risk premia charged on loans, as mentioned in the preceding section.

In the case of Spain, banking supervisors' insight is confirmed on the basis of both aggregate and loan-by-loan information. In short, credit risk arises especially during upturns and, accordingly, it seems reasonable for it to be provisioned substantially at that time, even if

there is still no objective evidence of impairment of specific loans, which can take time to emerge, but that does not make it less real, less incurred or less expected. Countercyclical provisions allow this latent impairment to be recognised as it is generated in the balance sheet, so that the income statement, including the countercyclical provisions, provides a fairer view of the bank and its financial position in the medium term.

These arguments mean that accounting doctrine can be confronted with theoretical and empirical reasons warranting appropriate coverage of loans to the private sector, and with not only macroeconomic, but also microeconomic, loan-by-loan, arguments. In other words, countercyclical provisions seek not only to strengthen banking sector solvency in a situation of excessive aggregate growth in bank lending but also to ensure that each bank makes appropriate provisioning of the credit portfolio, showing valuation prudence in line with the bank's true and fair view.

If there is sound evidence that loans granted during boom periods are higher risk and, therefore, that the latent loss incurred but not yet identified in a specific loan and the expected loss are greater, why not provision them accordingly? From an economic viewpoint, the reply is clear, although accounting doctrine has systematically rejected it, as noted by Poveda (2000) and Prado (2002). Only very recently, and after much international pressure, have accounting regulators radically changed their position and accepted provisioning for expected losses, as explained later on.

In short, and at the risk of oversimplifying, Spanish countercyclical provisions allow bank management incentives to be better aligned with (or adjusted to) the general interest, which requires early and sufficient coverage of expected losses and correction of credit risk price deviations that may arise during expansionary phases, when high competition distorts management decisions. They also provide protection from negative externalities that generate excessive credit growth, with the negative consequences that have been observed time and time again in numerous banking systems. Those elements cannot be addressed by the traditional accounting approach, and this ultimately supports the Spanish countercyclical proposal.

1.4 Use of countercyclical provisions

Spanish banks continued to build up countercyclical provisions in 2005 and in 2006-07, though not without taking issue with a provisioning system that they believed put them at a disadvantage to other banking systems and that, given the low level of non-performing loans, resulted in very high coverage ratios. These were the years of peak growth in credit to

the private sector, with real rates of growth of 15% and later on over 20%. Residential mortgages rose by 25% year-on-year and credit to real estate developers by up to 45%. Lenders and borrowers alike suffered from blurred judgment, as did most (including foreign) investors, funding the credit boom by acquiring securitisations of mortgage loans issued by Spanish banks.

In this setting, opposition – in some cases verging on hostility – to countercyclical provisions grew, which with hindsight and with the experience of the previous banking crisis is rather striking, considering how credit continued to expand. Banks insisted that the provisioning arrangements established in the new Circular (CBE 4/2004) were not fully consistent with either the spirit or the letter of the new accounting framework (IAS). In the face of this pressure, in early November 2006, the Banco de España sent a letter to the banking associations indicating that a system of provisioning requirements based on identical parameters for all institutions alike and calculated using standard parameters could mean that institutions with better credit quality were having to overprovision their unrealised losses, resulting in extremely high coverage ratios (provisions to non-performing loans).

It was decided, therefore, that when the general provision totalled more than three times the sum of an institution's non-performing loans, the upper limit on the general provision could be lowered to 123% (from 125%). In addition, institutions were notified by the Banco de España that it intended to include in its first revision of CBE 4/2004 a reduction in the lower limit of the general provision from 33% of weighted latent risk to 25%. Lastly, there was a timid mention of the possibility of moving towards the effective use of internal models, i.e. to allow banks to use their own provisioning models to comply with the requirements of Annex IX of CBE 4/2004.[42]

In mid-2007, just a couple of months before the onset of an international financial crisis the like of which had not been seen since before the Second World War, the Banco de España announced, at the regular seminar of the Spanish Financial Press Association in Santander, that the central bank was considering amending the provisioning regulations to allow institutions with internal risk measurement methods to calculate their own provisioning needs from the end of 2008. This was in tandem with Basel 2, which from 2008 would also allow banks to use their own internal models to calculate minimum capital requirements, following authorisation by the supervisor.

42 This letter aroused interest in the press. See, for example, the article in the financial daily *Expansión* of 15 November 2006 under the headline "Banco de España plans to do away with multimillion euro provisioning burden", and below, "The Spanish banking system and the problem of over-cushioning". The adjectives used against the provisions are striking.

By early 2008 banks were calling for authorisation to use those internal models to calculate loan loss provisions, taking advantage of the internal models being approved by the supervisor to comply with the Basel 2 capital requirements. Until such time as the models were approved, and for those institutions that continued to follow the standard approach (the method set by the Banco de España based on α and β parameters), banks also called for values to be lowered and argued that the reduction in the upper limit to 123% was insufficient. The banks' demands were not new – in fact they had been constant since the statistical provisions were first introduced – but what is surprising, as we have already noted, is that no one foresaw the crisis looming, not even its main protagonists.

Within the Banco de España, the Directorate General Banking Supervision assumed the leadership of the possible process of adapting provisioning regulations to institutions' internal models. This was a natural step, given that this Directorate General was also responsible for reviewing and, where appropriate, approving banks' internal models for calculating capital requirements. In general, those models calculated parameters associated with expected loss, and once adjusted (for example, to the economic cycle by incorporating a long-term average) they could also be used to calculate unexpected losses. The crux of the matter was, therefore, how to convert expected losses calculated by internal models into incurred losses (the concept used by international accounting standards at the time). Such a conversion was by no means straightforward, especially if the countercyclical nature of the provisions was to be maintained. Effective and consistent implementation of the concepts was no easy task, given the difficulties involved in estimating incurred loss, unexpected loss (calculated at a specific point in the cycle and throughout the credit cycle), the loss identification period (LIP), defined as the time lag between the actual loss event and observation of the loss event by the lender, and a final cyclical adjustment factor. Deposit institutions were working on these concepts in order to have their internal models approved for the purpose of calculating provisions. The simple approach of the statistical provisions or of the new general countercyclical provision had become a thing of the past.

However, in light of the events unfolding and the outbreak of the financial crisis, at the end of 2008 the Banco de España again sent a letter to the banking associations informing them that a new Circular (CBE 6/2008) had been approved, amending the Accounting Circular (CBE 4/2004). This letter contained no mention of internal models being used to calculate provisions. The main message was a reminder that the reference to a lower limit on the release of general provisions had been eliminated in CBE 6/2008, although the letter went on to say that the Banco de España recommended that institutions maintain a lower limit that should not, in its view, be less than 10%. In practice, therefore, the long-awaited

changes consisted in broadening the scope for using the stock of loan loss provisions built up, which made perfect sense in light of the scale of the crisis that was by then emerging and the explicitly countercyclical nature, long defended by the Banco de España, of those provisions.

What was not mentioned in the letter – the authorisation of internal models for the purpose of calculating provisions – was just as important as what was. Pragmatism was most likely a key aspect in that decision. Calibrating an internal provisions model is not easy, especially if it is to remain transparent and countercyclical. Moreover, it was not the right time to change the way to calculate provisions that had exhausted their upward run and were starting to diminish, just as they were designed to do given the prevailing economic situation.[43]

The SEC episode

The problem of adapting and adjusting countercyclical provisioning to international accounting standards was heightened by the fact that two Spanish banks – Banco Santander and BBVA – were listed in the United States and, therefore, were subject to requirements on financial reporting to investors based not on IAS but on US GAAP. One of those banks posted a significant discrepancy when it completed the reconciliation data (Form 20-F), with loan loss provisions much lower under US GAAP than under IAS.

Provisions required by an institution under US GAAP cannot be calculated based on peer group experience, but must be based on calculations using banks' own internal models. Spanish provisions, as we have seen above, are calculated using overall banking system data. A clash was, therefore, unavoidable.

The Securities and Exchange Commission (SEC), the US market supervisor, contacted the bank concerned for an explanation of the differences.

Accordingly, the Banco de España, as the banking supervisor and responsible for Annex IX of CBE 4/2004 which set the credit risk provisioning requirements, and the National Securities Market Commission (CNMV), as the securities market supervisor, held discussions with

43 It is difficult to conjecture what would have happened had banks' internal models been used, especially had they been used in 2006, or mid-2007; however, given banks' insistence in this respect, it is very likely that both the flow of provisioning and the stock of loan loss provisions would have been below the levels set by the standard approach, similarly to what seems to be the case with the regulatory capital requirements calculated using the standardised approach (given parameters) and the calculation based on banks' internal models, in Spain and, to a greater extent, in other European countries (Banco de España (2015) and Trucharte et al. (2015)).

the SEC to try to explain the logic behind the Spanish provisioning system and the reasons for these differences. One of the reasons was the type of aggregate calibration used to estimate the coefficients used to calculate provisions; another was the fact that the institution concerned had traditionally outperformed the system on average, and therefore departed from the average calibration. In addition, as a result of the cyclical position of the Spanish economy, non-performing loans were at an all-time low, and thus specific provisions were also extremely low. Explanations by telephone proved insufficient and ultimately the CNMV and the Banco de España had to travel to the United States in an endeavour to resolve the problem.

Interestingly, this clash between the SEC and Spain's provisioning regulations was not particularly out of the ordinary. Indeed, it was a specific instance of a more general clash[44] between two sets of authorities: on the one hand, banking supervisors with a conservative approach as regards institutions' credit risk coverage levels (the more and the earlier the provisions the better), as befits the authority responsible for supervision of banks' present and future solvency; and on the other hand, the securities market supervisor with a traditional accounting approach based on incurred losses that is both obliged and keen to reflect a true and fair view and, therefore, to ensure that banks, and any other listed firms, submit their financial statements in accordance with current accounting legislation.

The clash between the two views of provisions, i.e. backward or forward-looking, was clear in practice. The Spanish authorities' arguments upholding the compatibility between Spanish accounting standards and IAS and explaining in detail the differences linked to the specific cyclical position of the Spanish economy, in addition to prudential arguments, were not sufficient to convince the SEC.

It seems paradoxical that the provisioning level required, to protect investors (both in equity and fixed-income securities, whether collateralised debt, covered bonds or securitisations, or non-collateralised debt), is substancially lower in economic upturns, as higher loan loss provisions are not allowed. Higher provisions would reduce firms' profits and, therefore, their ability to distribute dividends, helping to retain capital in upturns so as to protect deposit institutions in economic downturns and, therefore, increasing the likelihood of banks being able to repay their debts with third parties, including bank deposits. And all in name of a true and fair view, achievement of which is more than arguable when backward-looking provisions are applied to highly granular credit portfolios (see Prado (2002) and Section 1.1), bearing in

44 See, for example, the work of Borio and Lowe (2001), referred to earlier, or Wall and Koch (2000), for a description of this clash.

mind, also, that the countercyclical (new general) provisions are determined automatically and were based on a known formula.

In any event, the Banco de España and the CNMV visited the SEC in July 2007, allowing valuable time to be gained, as provisioning continued to increase at least until the turn of the year when provisions started to be released on account of their countercyclical nature.

This curious episode may also be viewed through the work of Blinder (2009), in his thoughts on procyclicality and how accounting standards exacerbate the credit cycle by requiring very little provisioning when times are good (and realised losses are few) and how the requirements are then tightened when times turn bad, eroding banks' capital and forcing them to scramble for more, precisely when it is hardest and most expensive to find. Blinder, who is a former vice chairman of the Federal Reserve and a former member of President Clinton's Council of Economic Advisors, notes that the procyclicality of provisions is exacerbated in the US by practices of both the SEC and the Internal Revenue Service (IRS).

On the one hand, the SEC sometimes accuses banks of using loan loss provisions to smooth their earnings, by overprovisioning in upturns and underprovisioning in downturns. Blinder notes, as the good economist he is, that this is precisely what is needed in order to reduce the procyclicality of the financial system and its damaging effects on the economy. Similarly, the IRS prevents banks from overprovisioning when times are good because this reduces tax revenue in the short term. Clearly both practices are legitimate, but Blinder believes they should be subordinated to the needs of macroprudential supervision. However, even if these practices were corrected, to allow higher provisioning in economic upturns, over and above incurred losses, the inherent problem of procyclicality would still have to be addressed, and at that point Blinder refers to Spain's dynamic or countercyclical provisions.

Crockett (2000) was also aware of the difficulties faced by authorities, such as the Banco de España, that were keen to implement countercyclical provisions. As he most elegantly put it: "Changing provisioning practices, for instance, can raise eyebrows with tax authorities, the accounting profession and even securities regulators". Crockett, the General Manager of the BIS at the time, could not have been more right.

Before the crisis broke there was little criticism in the academic world of the procyclical nature of the accounting standards. Taylor and Goodhart (2006) were one interesting exception, noting that the IAS provisioning rule based on incurred losses (IAS 39) could potentially add to the procyclicality of the credit cycle, as it prevents forward-looking provisions from

being set aside to cover expected but as yet unrealised losses.[45] Viñals (2006), when commenting on the previous paper, insists on the procyclical nature of provisions based on incurred losses and on the use of dynamic provisions to mitigate that procyclicality.

Release of countercyclical provisions

As explained in detail in Chapter 3, the stock of countercyclical provisions peaked towards the end of 2007, before non-performing assets began to increase and when credit to the private sector, although decelerating, was still growing by 20% year-on-year. Until then, countercyclical provisioning had always been positive, with the provisions set aside charged to the income statement, and the stock of provisions had increased continuously, with the sole exception of a slight dip in early 2005 when IAS came into force, given the adjustments that had to be made, as we explained in the previous section.

From mid-2008 onwards the flow of countercyclical provisions turned negative, in the light of the significant increase in non-performing loans and, therefore, in the need for specific provisions. The beta (β) component of the formula for the new general provision introduced in 2005 gradually became more and more negative, more than offsetting the alpha (α) component that declined as credit decelerated sharply. The negative flow of countercyclical provisions began to make severe inroads into the stock built up since mid-2000 when the provisions were first introduced, offsetting in part the increase in specific provisions and, therefore, their impact on institutions' profits and own funds.

When the Spanish economy went into recession, non-performing loans rocketed. By end-2009 they had grown tenfold and in the following three years they tripled. Specific provisioning needs shot up and countercyclical provisions continued to be released, as they were designed to be, at a fast pace. By end-2009, in the depths of the first recession, 60% of the stock built up in the first eight years had already been used; the rest would disappear almost completely over the next three years. The rate of release of countercyclical provisions varied from one bank to another, according to how their NPLs and credit evolved.

As we noted earlier, at the end of 2008 when the severity of the looming banking crisis became evident, the regulators, in a letter from the Directorate General Banking Regulation to the banking associations, allowed banks to use almost all their countercyclical

45 Goodhart (2008) notes the difficulties involved in using countercyclical instruments in the framework of IAS. Perhaps for that reason, Goodhart and Persaud (2008), in an opinion piece in the *Financial Times* of 4 June 2008 with a thought-provoking title *("A Party Pooper's Guide to Financial Stability"),* opt for countercyclical capital instruments.

provision stock. The letter contained not only a reminder that the lower limit on the stock of provisions had been eliminated, but also a recommendation that institutions maintain a minimum of 10% of the sum of multiplying the alpha (α) parameter by the amount of each exposure class in order to cover latent risk in performing loans, even in the depths of the recession. The pace of the growth in specific provisioning, which increased tenfold in under two years (from mid-2007 to end-2008), fully warranted that decision to reduce the lower limit. The Banco de España always sustained that countercyclical provisions were not a permanent buffer to be held by banks, but rather one that was to be built up in good times to be used in full in bad times. The minimum level to be held was introduced to smooth the transition to IAS; once the scale of the crisis became clear, it made no sense to prevent the buffer from being used practically in its entirety.

The robust credit growth of the first decade of the third millennium was giving way to an unprecedented surge in NPL ratios, which would peak in 2014 at 14%. Once more an inevitable pattern, namely that too much credit growth too fast will invariably result in future non-performing loans, albeit in this case with a long time lag. The conservatism and concerns of the regulators and of the more prudent managers were again vindicated, although this was a Pyrrhic victory given the scale of the crisis.

The international banking crisis and the authorities' response

Major banks in the United States, the United Kingdom, Germany, the Netherlands and Belgium, to name the most emblematic examples, were simultaneously facing severe solvency problems that forced their governments to intervene to prevent the negative externalities that allowing those institutions to fail would have triggered for the rest of the domestic and global banking industry and the economy at large. The difficulties experienced in the banking and financial sector had a huge impact on the real economy, which entered into the worst recession since the Great Depression of the 1930s, with very sharp and marked broad-based falls in GDP in most developed countries.

Restructuring and public recapitalisation of the banking sector at a time of economic crisis, when millions of jobs were being lost, provoked public rejection, especially when compared with the remuneration packages that managers of the bailed-out institutions had received in earlier years. Many governments that found themselves involved in significant bank bail-outs were replaced by ones of a different political colour.

Given the scale of the banking crisis and its fiercely negative impact on the real economy, a profound review of financial regulation in general, and of banking regulation in particular,

was set in motion at the highest political level (the G20, a forum for political leaders from the world's most influential developed and emerging countries). The G20 assigned to the Financial Stability Forum (FSF), until then a forum for regulatory discussion with little influence and which was subsequently transformed into the Financial Stability Board (FSB), a leading role in the reform of the entire financial system, including banks, insurance companies and investment funds, with the power to influence banking, insurance, and securities and market regulators and supervisors, and also accounting regulators.

The final communiqué from the G20 Leaders' Summit held in London in April 2009 referred to the need to significantly strengthen capital requirements for banks and build up buffers of resources with loss-absorbing capacity in good times. It also called on the main accounting standard-setters – the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) – to work together with banking supervisors and regulators to improve standards on valuation of assets and loan loss provisions.

(Renewed) interest in Spanish countercyclical provisions

Meanwhile, the release of countercyclical provisions at Spanish banks mitigated the impact, both on earnings and own funds, of the surge in non-performing loans in the first part of the recession, when the fall in GDP tripled that of the previous recession in 1993. As numerous major banks in developed countries collapsed, Spanish banks appeared to withstand the initial onslaught reasonably well. All of a sudden, everyone was interested in countercyclical provisions, not only regulators and supervisors but also the foreign media.[46]

The G20 called on the accounting standard-setters to work with banking supervisors and regulators to improve provisioning standards, using Spain as an example of a country that had a provisioning system that seemed to offer better protection to its banks than other countries that had also experienced very strong credit growth, albeit with different characteristics (products based on US subprime mortgages, combined in many ways into bonds backed by those mortgages and distributed through the international financial system, especially in Europe). All of a sudden, the Banco de España was in the international spotlight.

46 As proof of this interest, for example, the mention in the *Financial Stability Report* of the Bank of England (2008), the contributions requested by the World Bank (Saurina (2009a)) and certain specialist journals – *Financial World* (Saurina (2009b)), and the *National Institute Economic Review* (Saurina (2011)) –, countless invitations to take part in international conferences and considerable interest from international journalists *(Financial Times, The Wall Street Journal).* In addition, on a rather more exotic note, the Banco de España Working Paper on the original statistical provision (2000), which included a simulation of how the provision worked, was reproduced, in Japanese, by the Japanese Bankers Association (2011).

Its response to this huge international interest in Spanish countercyclical provisions was twofold. On the one hand, satisfaction with the recognition that this widespread interest represented for an original instrument that, as we noted earlier, had scarcely been used until then in the supervisory realm and had been firmly opposed by the accounting world (Fernández Ordóñez (2008)). On the other hand, prudence when it came to explaining the real scope of the instrument and, in particular, the practical purpose that it could come to serve in Spain. The scale of credit expansion in Spain and the empirical knowledge available on the relationship between that expansion and future non-performing loans, resulting from the short-sightedness of managers, their herd behaviour, their desire for power and economic and social recognition, growing the business incommensurately, and their memory loss regarding risk, all called for prudence and caution.

In any event, as we explain below, the Banco de España took full part in the international discussions on the measurement and mitigation of procyclicality in the banking system.

Non-distributable cyclical reserves

Interestingly, the United Kingdom, one of the main protagonists of the crisis, with the public bail-out of two of its big four banks, launched a reform of its supervisory and regulatory framework steered by Lord Turner, the new chairman of the Financial Services Authority (FSA), up till then the all-powerful supervisory authority of the British financial services industry. The reform advocated, inter alia, the introduction of a non-distributable cyclical reserve ("a non-distributable Economic Cycle Reserve that should appear somewhere in the P&L account").[47]

On the one hand, the reform recognised the need for and usefulness of some sort of buffer, funded from the income statement and that would vary in amount over the course of the cycle. On the other, it referred to a non-distributable reserve, bringing it closer to the concept of regulatory capital. The reference to the income statement seemed to indicate that the reserve would be built up out of income, although after the profit for the year was known. Accordingly, this would be a mandatory distribution of profit to countercyclical reserves, rather than provisions that would be set aside earlier, reducing the profit for the year. This proposal was probably influenced by conversations with UK accounting regulators who at that time felt no sympathy for the idea of setting aside provisions to cover expected losses, and even less for explicitly countercyclical provisions. However, they did seem to accept cyclical reserves being set aside out of the profit for the year.

47 FSA (2009). Spain's countercyclical provisions were clearly the inspiration for the British proposal (and not only because the report included a box explaining how they worked), although the accounting fit was different.

The proposal is worth considering in some detail because, given the importance of the United Kingdom on the international financial markets, British proposals, along with those emerging from the United States, play a key – if not determining – role in the design of financial regulation at the international level. The British proposal provided for the build-up of countercyclical reserves, or – alternatively speaking – for countercyclical profit distribution, without interfering with the existing accounting legislation. They would possibly have liked to change the provisioning system, but they were no doubt all too aware of the difficulties that this entailed given the prevailing accounting doctrine. The proposal enabled them to achieve a very similar result to the Spanish countercyclical provisions, without clashing with the accounting regulators. Banks were able to build up funds in good years to be used in bad years. Moreover, the measures proposed affected distributable income and thus smoothed excess profits in economic upturns, and they could perhaps help to reduce bankers' variable remuneration packages and the incentives for bank managers to grow the balance sheet more and more during (excessive) credit growth phases.

Clearly the FSA's strategy was for the reserves to appear in the income statement, so that there would be two public measures of profitability (before and after the cyclical reserves). They also consistently proposed that bankers' bonus packages be based on the second measure of profitability, once income statements reflected a reasonable estimate of future losses.

In addition, the proposed non-distributable cyclical reserve served to counter potential problems not only in credit portfolio valuation (insufficient provisions) but also in trading book instruments. Thus, according to the position in the cycle, there was a possibility that banking or trading book profits might not be fully distributed to shareholders.

The non-distributable cyclical reserve proposed in the Turner Review vindicated the Banco de España's provisioning system, its logic and its rationale, but with a different accounting formula, making it a highly attractive proposal from the practical standpoint and as to its fit with the accounting standards.[48] It was no doubt this pragmatism that convinced the European Commission's technical services, which after discussions on dynamic and countercyclical provisions in Europe that ran from late 2008 through to mid-2009 finally opted for these non-distributable reserves, albeit acknowledging the merits of the Spanish dynamic provisions. Similarly at the international level, the FSB, and hence the BCBS, gradually came

48 It should be recalled, once more, that unlike the Banco de España, neither the FSA in the United Kingdom nor almost any other banking regulator or supervisor had the power to set accounting regulations for banks.

to support the British approach, also sometimes called the two-line approach to provisioning.[49] The international banks did not welcome this possibility with open arms, something which, at this stage of the book, should come as no surprise to the reader.[50]

The British approach to countercyclical provisions, which avoided confrontation with the accounting standard-setters while maintaining the essence of the rationale behind the Spanish dynamic provisioning system, and its growing acceptance at the international level, gradually persuaded the Spanish authorities. Hence, in August 2009, Fernando Restoy, the then vice-chairman of the CNMV, and José María Roldán, Director General of Banking Regulation at the Banco de España and a firm advocate of the Spanish countercyclical provisions since their inception, co-authored an article in *The Banker* (Restoy and Roldán (2009)) explaining the natural divide between accounting standard-setters and prudential supervisory authorities, and the legitimate interest of each in having income statements reflect their natural concerns (useful information for investors for the former, solvency for the latter), as well as the limitations of the international system of accounting standards on provisions and, most importantly, the possibility going forward of joint and reasonable solutions being found to satisfy their respective interests and viewpoints.

They proposed that a clear distinction be drawn between regular and distributable profits, along the lines of the Turner Review proposal. Accounting authorities would continue to set standards for reporting of regular profits, while at the same time allowing greater flexibility when it came to provisioning, and prudential authorities would decide how much of those regular profits could be distributed as dividend. The portion allocated to non-distributable reserves could be determined on a countercyclical basis and, here comes the subtlety of the proposal, "(…) crafted along the lines of the Spanish dynamic provision". This was a solution for countercyclical provisions that should be acceptable to accounting regulators and investors alike, as it was fully transparent, while at the same time retaining (and exporting) the Spanish model.

Another influential proposal from an international regulator was that of John C. Dugan, head of the Office of the Comptroller of the Currency (OCC), one of the US banking supervisors. In line with the long-standing tradition of banking supervisors' accounting prudence, in early 2009 he also called for greater flexibility in accounting standards and in their implementation

49 Burroni et al. (2009) also acknowledge the advantage of non-distributable reserves in that they do not clash with the accounting standards; however they prefer dynamic provisions, especially if they are considered a tax-deductible expense, which for the authors is completely reasonable as they are used to cover banks' existing losses.

50 See, for example, Global Risk Regulator (2009).

by bankers and external auditors, with a view to creating forward-looking provisions that would allow banks to anticipate a change in cycle and would afford them more protection.

The proposal suggested that a deterioration in credit standards could warrant additional provisions being set aside, fully in line with the rationale behind the Spanish system of countercyclical provisions. He subtly criticised the procyclicality of a provisioning system based on incurred losses, which he even described as theological. He admitted that forward-looking provisions could be used to smooth profits,[51] but added that the effect could be neutralised with greater reporting transparency by banks. At the same time, he opposed a move to fair value accounting for all bank assets, as that would increase procyclicality. Finally, he noted that Spain's dynamic or countercyclical provisions had the appeal of creating greater reserves earlier in the cycle, one of their main objectives.[52]

The problem of the procyclicality of the financial system

In any event, the main concern for regulatory and supervisory authorities at the time was not provisions but rather the procyclicality of the financial system in general and the banking system in particular. In boom periods credit standards were eased (and increasingly so further into the cycle), risk premia were insufficient to cover the probability of default and banks were decapitalised. When the crisis broke, capital levels were very low and Basel 2, a new system for regulatory capital determination using banks' own internal models and based on clearly procyclical credit risk parameters such as the probability of default (PD) and the loss given default (LGD), had just come into force. Consequently, it was widely expected that banks' capital requirements would rise sharply and that investors, in the light of the uncertainty surrounding the future of those banks, would be reluctant to inject capital, especially in the wake of the collapse of a major and complex institution such as Lehman Brothers.

The academic circles most closely tied to banking regulators had been reflecting for some time on the procyclical nature of capital standards. The seminal work of Borio et al. (2001) was rapidly expanded upon and supplemented. Accordingly, although the procyclicality of the accounting standards attracted little academic or supervisory interest, save from Professor Goodhart as mentioned earlier, the potential procyclicality of Basel 2 was ana-

51 In Dugan's words, the proverbial "cookie jar". Also in this respect, see Hughes (2009) for justification of the IASB's reluctance to accept more forward-looking provisions, unless they are made in the form of non-distributable reserves.

52 Dugan's remarks (Dugan (2009)) are a wonderful blend of conceptual clarity, common sense and subtlety. Rarely does one find ten pages on accounting rules for banks from a prudential supervisor's standpoint so well written.

lysed more extensively, even before it came into force, eliciting conflicting views and a variety of solutions.

Thus, as early as 2004, Kashyap and Stein noted that Basel 2 had the potential to create an economically significant and possibly even quite high level of procyclicality in capital requirements, depending on the credit models used and banks' business mix. The authors shared the view that the procyclicality of Basel 2 was essentially a result of there being a single capital requirements curve based on the risk parameter (PD), meaning that changes in this parameter over the course of the economic cycle result in monotonic changes in capital requirements. In downturns, higher PD levels will require higher regulatory capital, at a time when banks may find it difficult to obtain such capital, which may trigger a decline in the supply of credit and a worsening of the recession. Taylor and Goodhart (2006) and Persaud (2008) shared the criticism of the procyclicality of Basel 2.

However, Viñals (2006), Saurina (2008) and the ECB (2009) adopted a more cautious stance, noting that although the higher risk sensitivity of Basel 2 did indeed mean that *regulatory* capital would fluctuate more over the cycle, this would not necessarily mean that financing obtained by firms would contract. Thus, calculations of regulatory capital based on PD may be smoothed over the cycle if they are through-the-cycle (TTC) rather than point-in-time (PIT) calculations, to use the internal risk model jargon. Loss given default may be steadier over the cycle if it is calculated as downturn LGD, and Pillar 1 requirements for operational risk may even become countercyclical.

In addition, Pillars 2 and 3 may, in principle, allow for higher capital requirements in economic upturns, if the supervisor and investors act decisively. Moreover, banks generally operate with capital levels above the regulatory minimum, affording them headroom to manage credit growth. Lastly, firms may obtain financing from other sources (non-bank or shadow bank financing, inter-company loans, etc.), or they may adjust their demand for credit to the supply of credit. As a result, Basel 2 is not immediately procyclical; several stages must first be completed.

Gordy and Howells (2006) are also sceptical regarding the materiality of the procyclicality of Basel 2, although they recognise that alternative correction proposals, if deemed necessary, should be assessed on a consistent cross-jurisdiction basis. In that case the authors, who both belong to the Federal Reserve Board (FRB) in Washington DC, are clearly opposed to smoothing the input (using TTC rather than PIT PDs) and clearly in favour of smoothing the output, on an aggregate level and by means of a clear public rule or formula.

Instruments to mitigate procyclicality

In the second half of 2008 the Banco de España began to work on measuring the procyclicality of Basel 2 and, when it found that the level of procyclicality could be quite significant, on a specific proposal to mitigate it. Repullo et al. (2009) concisely describe that measurement and, in particular, the basic elements of a proposal to mitigate procyclicality.[53] Clearly, the use of PIT PDs in business loan portfolios generates a large variability in regulatory capital requirements, which is lessened if TTC PDs are used.

However, when published subsequently, with more details and an analysis of robustness (see Repullo et al. (2010)), the paper advocated output smoothing based on a measure of dispersion with respect to average economic growth (economic cycle), or alternatively average credit growth (financial cycle), in accordance with the seminal paper by Jiménez and Saurina (2006) on dynamic provisions based on the position in the credit cycle mentioned in the previous section.

Smoothing output is preferred because the concept of TTC PD may be unclear, meaning different things to different banks and in different countries. Moreover, TTC PDs are not the best for loan pricing (risk premium) and, therefore, for managing credit risk.

Unfortunately, this paper never attracted the attention or interest of the Spanish negotiators on the relevant BCBS working groups and in consequence had no direct influence when it came to determining the precise shape of the countercyclical regulatory capital buffer being designed by the BCBS.

In any event, the paper was one of the few attempts at an international level to specifically measure the potential procyclicality of Basel 2, according to how the risk parameters underlying the regulatory capital requirement formulae are calculated, and to offer a solution along the lines of that advocated by Gordy and Howells (2006) and consistent with Hanson et al. (2011) when they called for a macroprudential instrument in the form of regulatory capital requirements that vary over the course of the economic cycle.

53 This was one of a collection of papers published in March 2009 under the aegis of the CEPR. The aim of the project, in which many of Europe's leading academic experts in the economics of banking and financial regulation participated, was to influence the discussions of the G20 summit to be held the following month in London to propose improvements in international financial regulation, and especially banking regulation, to prevent a future crisis similar to that affecting the banking system in the main developed countries.

Countercyclical provisions and capital

When the crisis erupted, discussions on the procyclicality of Basel 2, confined until then to the academic world, suddenly proliferated. As we explain below, the G20 embarked on an ambitious programme to reform financial regulation, which obliged the BCBS to draw up a countercyclical buffer proposal that was initially focused both on provisions and capital. The Spanish experience of dynamic provisions, the only countercyclical regulatory instrument in place for sufficient time to provide any clues as to the potential effects of the regulatory change on the way, placed the Banco de España at the centre of the international debate.

Criticism of the procyclicality of Basel 2, and the financial crisis that broke out in August 2007 and intensified significantly from September 2008, led the BCBS to reflect on the role of capital and provisions in regulation. Wellink (2008), the BCBS chairman, noted that the crisis showed that banks needed to build up high levels of capital and provisions in good times, which they could then draw upon in periods of stress. The BCBS thus recognised the need for countercyclical buffers. Wellink also spoke of promoting the TTC provisioning, setting aside provisions in excess of specific provisions in good times and vice versa in bad times, which is similar to the modus operandi of the Spanish countercyclical provisions. These TTC provisions aimed to smooth provisioning over the course of the cycle, so that it did not grow so sharply in bad times and was higher in good times.

For the trading book there was also talk of valuation reserves, to mitigate the procyclicality of market valuations when prices (and risk premia) overreacted, generating great uncertainty, or when liquidity was scarce or had evaporated with the crisis.[54] Uncertainties surrounding valuations were higher when banks used their own valuation models and there were few market inputs to feed into those models. In such cases, it may make sense to prevent a full impact on profits in a market boom. Banco de España (2008), Viñals (2008) and the Committee on the Global Financial System (CGFS (2009))[55] all contain proposals in that vein that entail exporting the idea of countercyclical provisions from the credit portfolio to the fixed-income trading book, where asset prices move in line with risk premia, that are sometimes subject to excessive fluctuations or may be difficult to measure correctly.

The valuation reserves proposed must be objective and transparent, reflecting the uncertainty surrounding default correlation between instruments. When the value of instruments

54 Borio (2008) stresses the procyclicality that can result if market values are used when markets are illiquid or there is a high margin of error or uncertainty in financial asset pricing.

55 The latter also contains a box on the Spanish countercyclical provisions ("dynamic provisions" in international parlance), though they were not the main focus of the paper.

declines as a result of uncertainty, valuation reserves would be the first tool available to absorb that decline. Spanish countercyclical provisions thus began to move into the international arena, both on a conceptual level and, so it seemed, in the shape of regulatory policy proposals.

The FSF also published a report, on 2 April 2009, on addressing procyclicality in the financial system (FSF (2009)), which it considered an essential component of strengthening the macroprudential orientation of financial regulation and supervision. Three priority areas were defined: regulatory capital, provisions and the interaction between valuation and leverage. In the case of capital, the recommendations provide a blueprint for the BCBS for the design of Basel 3: more and higher quality capital; a new non-risk-based leverage ratio; strengthening of stress testing as an essential part of Pillar 2; and, naturally, higher capital levels in the banking sector in good times that may be drawn upon in times of economic and financial stress. In other words, the FSF recommended the introduction of capital requirements that vary over the course of the cycle, rising in economic upturns and declining in downturns. The instrument proposed is very similar to Spanish countercyclical provisions, but in the form of regulatory capital.

The FSF report also contains recommendations on provisions, the main idea being that the earlier loan loss provisions are made the better. Rather than waiting until losses are incurred, the FSF suggests that accounting authorities (the FASB in the United States, the IASB for the rest of the world) issue a reminder that existing provisioning standards require the use of judgment to determine the level of provisions necessary, thus implicitly inviting banks to use that judgment to set aside higher provisions and to do it earlier. The idea is that banks should proactively cover the losses inherent in their loan portfolios, and that auditors and regulators be receptive to this earlier recognition of loan losses. Earlier provisioning of losses should reduce the procyclicality of provisions (bringing them forward in the cycle).

Significantly, the FSF also invites the FASB and the IASB to reconsider the incurred loss model and to analyse alternative approaches such as fair value, expected loss and, especially, dynamic provisions. This was international recognition for the merits of the provisioning system created in Spain to reduce the amplitude of the financial crisis and safeguard banks and the economy from the vagaries of the cycle.

Obstacles to international progress on countercyclical provisions

Nevertheless, the attentive reader will have noticed that the two recommendations, one on countercyclical capital and the other on provisions, were quite different. The first recommen-

dation called on the BCBS to set the countercyclical capital buffer in motion, while the second placed the emphasis on a simple statement by accounting regulators calling for more flexibility for banks, to be followed in time by reconsideration of the incurred loss approach to determine whether it was appropriate and, if not, whether it should be replaced. The communiqués from successive G20 summits would gradually highlight these differences.

Thus, the April 2009 document was a response to the concerns expressed by the G20 at its first meeting in Washington DC in November 2008, two months after the collapse of Lehman Brothers.[56] The London summit Leaders' Statement of 2 April 2009 spoke of dampening the financial and economic cycle and of the need to build up buffers of resources with loss-absorption capacity (understood to mean capital and provisions) in good times. It also called urgently on accounting standard-setters to improve provisioning standards and include more information on lending to permit higher provisioning. Finally, the creation of the new Financial Stability Board (FSB) to succeed the FSF was announced and the need to develop macroprudential instruments was emphasised.[57]

The Pittsburgh summit of September 2009 reinforced the need to mitigate procyclicality, with special mention of countercyclical capital buffers and of forward-looking provisions, which would include Spanish dynamic provisions, along with a call to accounting bodies to unify their standards, a goal that would subsequently be reiterated frequently but that has still not been achieved. This resistance is surprising, considering that the G20 did manage to prevail upon most supervisors and regulators, especially banking supervisors and regulators, many of which were independent central banks. So it seems that the reluctance of accounting doctrine, described in detail earlier in this chapter, was not only a Spanish but rather a global phenomenon.

The lengthy declaration that followed the G20 Toronto summit of 26 and 27 June 2010 contained no reference to provisions. Regulators and supervisors continued to work to finalise a new regulatory capital framework that would include a countercyclical capital buffer and macroprudential instruments, but the interest in countercyclical, dynamic or forward-looking provisions had faded considerably. Regulators were no doubt beginning to realise how difficult it would be to change accounting doctrine, and even to achieve convergence between banking regulators' conception of provisions, which was essentially to cover expected losses, and accounting doctrine's, which was still anchored to incurred losses.

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56 *Declaration of the Summit on Financial Markets and the World Economy, Washington DC, November 15, 2008*, which refers to mitigating the procyclicality in regulatory policy as one of the tasks for Ministers and Experts.

57 The document published by the FSF on mitigation of procyclicality may be interpreted, therefore, as its last will and testament, which was taken up and subsequently implemented at a different pace by its heir, the FSB.

Nevertheless, the G20 exerted strong pressure in favour of measures to combat procyclicality and in Basel progress continued reasonably well towards a set of capital requirements with a countercyclical component, which was very probably why many supervisors ceased to see the need for provisions to act as a countercyclical instrument (including the UK supervisor, which had proposed the use of non-distributable cyclical reserves as analysed above).

The G20 Seoul summit held in November 2010 fully confirmed this trend. The G20 gave its backing to the new Basel Accord to strengthen bank capital and liquidity and build up countercyclical buffers. Each country undertook to transpose the new framework into its national laws and regulations and, so as not to weaken the global economy, implementation was to be phased in, from 1 January 2013, with full implementation by 1 January 2019. They again insisted on the need to converge towards a single set of global accounting standards, calling on both the FASB and the IASB to achieve convergence by end-2011, which goal, as we know, was not achieved. By then there were no references at all to the use of provisions to mitigate procyclicality; the global preference for countercyclical regulatory capital instruments over countercyclical provisions had become definitively enshrined. And this at a time when release of the stock of dynamic provisions was accelerating in Spain, as specific provisions rose continuously with the unstoppable growth in non-performing loans.

The final outcome is already known, but, in a book on countercyclical provisions, it is worth explaining in more detail the role played by the Banco de España in the international regulatory debate.

Cooperation with the BIS

Towards the end of 2008, Claudio Borio, chief economist of the BIS, contacted the Banco de España to explore the possibility of working on a joint project to identify instruments to counteract the procyclicality of the banking system. The intention was not for a general or theoretical reflection, but rather for various potential instruments to be selected and designed, with an explanation of how they would work and numerical examples of their impact. The Banco de España immediately accepted the offer and, following an introductory meeting in a snow-blanketed Basel the week before the Christmas holidays, the group formed set to work.

There was not much time. The aim was to present results to the FSF in March 2009. The project was very attractive but the schedule was tight, so both the BIS and the Banco de España set their experts and researchers to work on dynamic provisions and capital smoothing (either smoothing the inputs of the Basel 2 formula, as in Saurina and Trucharte (2007),

or the outputs, as proposed by Repullo et al. (2010)), without neglecting trading book procyclicality, addressed through the valuation reserves explained above (Banco de España (2008) and Viñals (2008)), and also on the accounting standards which might have been exacerbating the procyclicality of the financial system.

To set the ball rolling, the BIS had circulated a stimulating paper (Borio and Drehmann (2008)). This discussed automatic stabilisers and rules – rather than discretion – for the purpose of determining regulatory capital, market indicators (CDS risk premia and asset prices), and credit behaviour for activating countercyclical regulatory capital, and also prudential filters for addressing provisions calculated on a backward-looking rather than forward-looking basis and for reducing the effects of excessive volatility on the financial markets.

It would have been difficult to think of a set of topics so closely reflecting the interests of the Banco de España, with such resonance at regulatory level and so clearly topical and potentially useful. It was for these reasons that the proposal to participate in the joint project with the BIS was so welcome, the focus quickly falling on analysis of the relationship between capital levels and provisions over the economic and financial cycle and rough calibration of the order of magnitude of the potential measures to be proposed.

The conversations with the recipients of the paper (the working groups on procyclicality set up by the FSF and the BCBS) and the changing priorities of international banking regulators served to substantially deepen the interest in countercyclical capital, and at the same time to reduce it in relation to dynamic provisions, which were less likely to be accepted in jurisdictions in which banking regulators lacked powers in the area of accounting.

After intensive work and numerous interactions, in mid-July 2009 a paper was ready. It set out a countercyclical capital requirement which increased in upswings as a function of the ratio of credit to gross domestic product (GDP) or, with less evidence, as a function of the credit flow, and which was not applied in downturns when bank losses materialise and credit shrinks significantly. In addition, it highlighted how the lower variability of the minimum capital requirements also reduced procyclicality, in line with the evidence found of differences in capital, depending on whether it was calculated with PIT PDs or with TTC PDs. This paper, improved and corrected, was published a year later (Drehmann et al. (2010)) and basically established the countercyclical capital buffer in international financial regulation.

The BCBS took a further year and a half to publish the final guidelines bringing the countercyclical capital buffer into operation (BCBS (2010a)). These guidelines set out basic principles reflecting the main points of the aforementioned joint paper prepared by the BIS and

the Banco de España. These principles establish the countercyclical capital buffer (CCyB)[58] as a macroprudential instrument designed to protect the banking sector from future losses as a result of excessive credit growth, which causes systemic risk to increase. It is activated by reference to an indicator based on the credit-to-GDP ratio, but this is not the only, or even the dominant, indicator because it can be supplemented by indicators of asset prices, CDS spreads, credit conditions, etc.[59] The release of the countercyclical buffer was left to the discretion of the regulatory/supervisory authorities.

The idea is to activate the CCyB when credit, as a proportion of GDP, clearly exceeds its trend (the difference between the actual credit-to-GDP ratio and its trend, which is called the credit-to-GDP gap), and to deactivate it when the opposite is true, although its reduction is left to the discretion of the supervisor.

Given its macroprudential objective, Repullo and Saurina (2012) favour a CCyB based on GDP growth, a more direct measure of the economic cycle for activating or deactivating the CCyB. Moreover, with this indicator there are no problems of lack of synchrony between credit and GDP, which could lead to CCyB requirements being raised when an economy is already in recession but credit is still growing, albeit more slowly. Finally, an automatic symmetrical CCyB mechanism is preferred because of the positive experience of Spanish countercyclical provisions which rise or fall according to an automatic transparent formula that allows provisions to be reduced without the market or the supervisor considering that the institution is becoming weaker.

This automatic symmetrical mechanism allows the macroprudential properties of the instrument to be preserved and prevents any overly zealous microprudential supervisor from refusing to allow the capital buffer to be released. This refusal would prevent it from fulfilling its intended purpose of reducing the procyclicality of bank credit to avoid greater evils in the economy, and, in a second-round effect, this would impact the situation of each bank. Fortunately, the Basel Committee (BCBS (2010b)) recognises that the credit-to-GDP variable on its own cannot serve as the sole indicator governing the CCyB.

Examination of the final result announced by the BCBS shows that its proposal fully shares the ultimate objective of countercyclical provisions, i.e. to protect banks from excessive credit growth, albeit in the form of capital, and with discretionality when it comes to releas-

58 At first the abbreviation used for the countercyclical capital buffer was CCB. But since Basel 3 also created a capital conservation buffer with the same acronym (CCB), a "y" has recently been added to the former to distinguish it from the latter.

59 Banco de España (2016) lists the indicators used to decide whether or not to activate the CCyB in Spain.

ing the buffer. It will have to be seen whether this latter feature, which distinguishes it from the Spanish provisions, can in practice be consistent with the macroprudential dimension of the instrument. When the Banco de España embarked on the project with the BIS it intended to design and set in motion a horse, but what eventually emerged, after its proposal had been through the various working groups and international committees, was a camel. All the same, it serves to traverse the credit cycle, accumulating reserves in favourable times to be used when the cyclical difficulties are greatest, helping banks to survive until the beginning of the next cyclical journey.

Discussion on countercyclical instruments in Brussels

Almost in parallel with the discussions in Basel, the European Union opened its own discussion of countercyclical instruments, with the idea of adopting a common position and exerting an effective influence on the international debate. Also, the banking crisis had hit Europe particularly hard and public funds had been used to rescue major banks of very significant countries to prevent adverse externalities for their depositors and the economy in general.

The Banco de España participated intensively in these European debates. It contributed its experience with countercyclical provisions, which were already being used heavily with the arrival of the first recession and the substantial increase in non-performing loans and the associated specific provisions.

A Working Group on Procyclicality was set up to carry out this European project. It was chaired by the then Spanish State Secretary for Economic Affairs, David Vegara, and made up by representatives of national central banks, national supervisors, some of whom were members of the European supervisory coordination committees (the Committee of European Banking Supervisors (CEBS)[60] and the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS)), finance ministries and high-level representatives of the European Commission. This composition is usual for high-level groups preparing important matters for the Economic and Financial Committee in Brussels.

From the very first meeting it was evident that the macroprudential dimension of procyclicality would have to be taken into account in the proposals made. Also, two options were presented for macroprudential instruments: countercyclical provisions (the Spanish “dynamic” provisions) and countercyclical capital. At that first meeting there were numerous participants interested in the former, although the difficulties raised by accounting regulators and

60 Almost simultaneously the CEBS was examining an Italian proposal to develop countercyclical capital buffers.

the hitherto unfruitful relationship between banking regulators and accounting regulators in Basel, despite numerous coordination and discussion initiatives, were also apparent.

Unlike in the international discussions in the Basel setting, in the European discussion dynamic provisions remained an option throughout the whole life of the working group, which met six times and submitted its work at the end of June 2009. They remained an option despite the United Kingdom, the Netherlands and the European Commission being openly against them and Germany and the ECB having no appetite for them and coming out in favour of countercyclical capital. The role of the chairman of the working group, until he was replaced in the spring, was fundamental in ensuring that the final report included all the various views of the group in favour of the various instruments available to counteract procyclicality.

The discussion on countercyclical provisions and the various approaches held led to the need for accounting rules to be more responsive to prudent valuation and for provisions to be forward-looking, with some countries suggesting that they be based on expected losses. This proposal, in line with the positions long defended by banking regulators, would still take some years to prevail in the international debate and to be accepted by the accounting authorities. There were also countries in favour of prudential filters, in line with the UK proposal set out in the Turner Review on non-distributable cyclical reserves, explained above, and valuation reserves, which attracted the sympathy and interest of countries such as France.

After discussing the group's final report, in early July 2009 the Council of the European Union came out clearly in favour of forward-looking provisions, the Spanish dynamic provision being included in that category. The Council considered that the accounting authorities should prioritise changing the accounting rules to allow greater flexibility in provisioning for expected losses. At the same time, it recognised that forward-looking provisions might not be sufficient to counteract procyclicality, and thus considered that other avenues such as countercyclical capital buffers should be explored. Finally, it asked for a review of the market value of many categories of assets in order for the uncertainty of those valuations and the impact on them of market liquidity (or lack thereof) to be adequately reflected. The Council ended by urging the IASB to amend its standard on provisions, IAS 39, to incorporate all the aforementioned changes.

Despite the notable success that the Council's position of July 2009 represented, the support for dynamic provisions did not lead to decisions, either by accounting regulators or in the own funds Directive, then in the process of being revised. This was despite the

fact that the proposals by the Commission's technical services in mid-2009 were closely in line with dynamic provisions and sought to amend IAS 39 to accommodate them within it.

The outright opposition of the Anglo-Saxon countries, who favoured countercyclical capital buffers and continuing to base provisions on incurred losses, and also their conception of dynamic provisions solely as a non-distributable reserve, below (not above) the profit line, frustrated the opportunity to extend dynamic provisions within Europe, to which a notable contribution had been made by the EU procyclicality working group described above.

In the subsequent public consultation process, most of the private-sector banks and all the accounting firms which responded were opposed to dynamic provisions, asserting that they should not be allowed to interfere with IAS and that they might distort the fair presentation of entities, arguments which the Banco de España had been hearing for a decade and whose validity has been questioned in earlier sections of this chapter.

Interaction with the issuer of international accounting standards (IASB)

The accounting authorities came under international pressure because provisions based on incurred loss increase the procyclicality of banking systems. This pressure led the IASB, headquartered in London and progenitor of IAS, to take an interest in the Spanish dynamic or countercyclical provisions. Such was its interest that it invited the Banco de España to make a presentation on its provisioning system in mid-June 2009.

Preliminary discussions were undertaken with the IASB and a thorough rationale for countercyclical provisions was given using a credit cohort model, pointing out the inadequate valuation *(mispricing)* of credit risk in the final stage of the expansionary cycle and insisting on the early identification of losses and the matching of revenues and expenses… It was all to no avail. They were not convinced.

Moreover, as already mentioned in this section, around that time the interest of international organisations in a countercyclical provisioning system like the Spanish one was waning, giving way to a clear preference for a countercyclical mechanism targeting capital or, if via provisions, one on a line below the final accounting profit, in line with the proposal by the Turner Review.[61]

61 Some specialised journalists continued to insist on the need for dynamic provisions to make financial systems safer (Wolf (2009), Jackson (2010)), which is praiseworthy and demonstrates their independence.

Other debates on procyclicality and how to deal with it

In this setting of regulatory ferment and international discussion on how to counteract the procyclicality of the financial system revealed by the crisis, the Banco de España did not avoid a single debate on the issue, regardless of how complicated it was or how fiercely the participants opposed the Spanish proposals.

It thus participated in the London debating circles (with investors, bankers, accounting regulators, journalists, regulators and central bankers), where there was a painstaking search for explanations and for banking regulation alternatives and where the birth of macroprudential regulation and supervision began to be discernible. An example of this was the presence in early February 2009 of the Banco de España, together with the Deputy Governor of the Bank of England and a partner of one of the major international audit firms, in a discussion organised by the Centre for the Study of Financial Innovation (CSFI) on proposals to set capital or provisions countercyclically.[62]

Some months earlier, at the peak of the problems in the international banking system (particularly in the United States and in the United Kingdom), the Deputy Governor of the Bank of England, Sir John Gieve, had said in reference to Spanish countercyclical provisions: "The Spanish example demonstrates that – despite all the technical arguments there may be about the details – a mechanism with broadly the right features is practicable and can generate worthwhile additional reserves against the losses which crystallise in cyclical downturns. (…) I think it merits serious consideration for more widespread adoption, irrespective of the accounting and tax treatment such reserves might attract".[63]

Another important meeting at which the Banco de España was invited to speak, along with the European Central Bank and the US Securities and Exchange Commission among the financial regulators and supervisors, was that organised by the European Commission on 7 and 8 May 2009 (Financial Reporting in a Changing World) on potential reform of the provisions based on IAS 39, with the focus on its procyclicality and how to resolve it. This conference, attended by numerous investors, auditors and financial institutions, was held at the same time as the EU countries were working within the Economic and Financial Committee on the presentation of consensual European proposals in the international debate, as explained

62 Hughes (2009) and Saurina (2009b) are further evidence of the British interest in dynamic provisions. In mid-March 2010 the Banco de España returned to London to talk about dynamic provisions and, more generally, about the rules on specific provisions needed by banks in view of the special characteristics of their business. But the winds of change were already blowing in favour of countercyclical capital and against dynamic provisions.

63 See Gieve (2008).

above, and as the European Commission's technical services devised their proposal on countercyclical provisions.[64]

Also in Brussels, Bruegel, a European think tank, expressed interest in the Spanish provisioning system and, more generally, in the supervision model, and invited the Banco de España to discuss the issue. Another example of a debating opportunity was the Banco de España's attendance, in September 2009, at the Eurofi Financial Forum, a platform for exchanges between regulators and the finance sector chaired by Jacques de Larosière,[65] former Governor of the Banque de France and former Managing Director of the International Monetary Fund (IMF). At this forum, Spanish representatives once again argued in favour of the rationality of countercyclical provisions. Other examples are the seminars and meetings held under the auspices of the G20, where the future form of international banking regulation was debated with a true sense of urgency.[66]

The Banco de España also took part in debates in academic circles, such as the Conference on Financial Regulation organised at Columbia University by the Nobel prize-winning economist Joseph Stiglitz and some of his colleagues (Stephanie Griffith-Jones and José Antonio Ocampo) in mid-November 2008, at which an extensive roundtable discussion was held with widely varying (and sometimes radical) points of view on the best approach for reforming international financial regulation.[67] The sympathy for countercyclical mechanisms was evident, in a setting, at a time and with participants that highlighted market failures (asymmetric information on both sides of bank balance sheets, negative externalities, insufficient market oversight), their serious consequences for the economy and individuals, and the possibility that (well-designed and rigorously implemented) regulation might contribute to remedying them.[68]

Finally, the Banco de España also organised conferences to discuss the issue of procyclicality and possible solutions, such as that held in Madrid in May 2009 in collaboration with the FSI.

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64 The Banco de España met with these technical services on several occasions to clarify doubts about the operating mechanism of Spanish countercyclical provisions.

65 A little earlier, in February of that year, the publication of the Larosière Report (2009) sowed the seeds of the future European supervision framework and, particularly, of the European macroprudential supervisory system.

66 An example is the OECD seminar held in Paris in July 2011 on the new financial landscape, with the participation of international organisations and representatives from central banks, supervisors and Treasuries of America, Asia and Europe, hosted by the Australian authorities which were then chairing the G20.

67 For a useful summary of some of these proposals, see Griffith-Jones et al. (2008).

68 Ocampo (2003) had already pointed out that countercyclical provisions could be useful in protecting banking systems from credit risk arising from excessive credit growth leading to severe downturns. This expert highlights the case of Spanish statistical provisions, which he considers to be a sound instrument, and which should be complemented by others to cover unexpected losses.

As a final reminder, it should once again be stressed that any explanation of the rationale behind Spanish countercyclical provisions, their functioning, virtues, limitations and impact was always preceded by an initial frank warning that they would not miraculously cure the banking crisis in Spain, like a silver bullet. And they certainly did not at those institutions which slackened their credit standards most over the expansionary period.

Provisions versus countercyclical capital

As explained in detail in the preceding pages, the BCBS launched its capital requirements reform (Basel 3) powerfully influenced by the FSB and the G20, which at the same time were keen to show they were taking remedial action in the face of public opinion that could scarcely believe the events unfolding in a hitherto calm financial world. This process was to culminate in the setting of new regulatory standards, basically focusing on the definition and calculation of the numerator of the capital ratio. The new capital requirement took shape in what was termed Common Equity Tier 1 (CET1). This included higher quality elements than under Basel 2, which was forged in the years of the economic and financial boom when almost everyone was convinced that banks' ability to measure and manage risk was increasing over time, allowing them to operate with ever lower capital levels, without regard to the credit cycle or economic agents' rising indebtedness.

As described above, the Banco de España played a very active role in the proposals and discussions leading to banks being required to set aside a countercyclical capital buffer that would grow during upturns and shrink during downturns. At the same time the original idea of additional (or alternative) countercyclical provisions was abandoned, as explained in more detail in the following section, although it is not obvious that they cannot coexist and complement one another. Countercyclical provisions have an impact on the income statement, which is probably the main – and at times appears to be the only – indicator that concerns bank management. Accordingly, if a bank were to implement a policy of very rapid credit growth, approving loans with very tight risk premia, it would immediately feel the impact on its profits, as they would be reduced by the requirement to provision a certain amount for new lending. And those provisions would be higher the more expansionary the phase of the economic cycle. This impact may lead bank management, or even other stakeholders, to reflect on whether relaxing credit standards for certain homogeneous risk groups or loan sub-portfolios would be appropriate or possibly dangerous.

Additionally, charging provisions to earnings and building up a stock of provisions limits a bank's decapitalisation almost automatically, provided the payout ratio remains a constant

percentage of final profit, and strengthens its resilience to the next downturn by means of an instrument that could be used to shore up profits and solvency.

Conversely, if the countercyclical requirement is expressed in terms of capital, there are multiple ways of complying with it, in particular during expansionary phases, when regulatory capital could be reduced in relative terms (per unit lent) if its determinants (PD and LGD) drop, due to its possible procyclicality (i.e. if no cyclical adjustment is considered when these parameters are estimated). Capital requirements, in contrast to provisions, afford managers more room for manoeuvre when making credit portfolio growth decisions. In addition, the expansionary environment means that investors have plentiful capital ready to flow into banks while their balance sheet growth is in full swing, without considering the precise destination of this new capital. Once again, this is unlike provisions, which reduce accounting profit as a direct result of credit growth.

Strong opposition to countercyclical provisions from the accounting world, despite pressure from the G20 and the FSB, must have been what led banking supervisors to opt for the countercyclical capital buffer, in which accounting regulators play no part. The lack of discussion, and perhaps of understanding, of the ultimate determinants of the behaviour of bank management, along with the BCBS's urgent need to present solutions to its new bosses, the FSB and the G20, did the rest. Nothing would have prevented the coexistence of the two instruments. A historic opportunity to introduce provisions with a direct impact on managers' incentives when granting loans – the most significant part of a bank's balance sheet as far as the risk of collapse of a bank is concerned – was thus missed.

Ironically, this was also a victory for the Spanish accounting regulators, who had always argued that countercyclical mechanisms should be implemented via instruments affecting regulatory capital rather than provisioning requirements. Nevertheless, as explained in the final section of this chapter, this story took an unexpected turn a few years later, although it came too late to incorporate Spanish countercyclical provisions into the new framework of countercyclical instruments deemed eligible by international regulators.

Macroprudential dimension of countercyclical capital (and provisions)

Discussions of the countercyclical capital buffer in Basel highlighted that this instrument, and others that were to accompany it, would give the capital ratio a macroprudential dimension it had previously lacked. The capital accumulated by this buffer in upturns should be available for release in downturns, to enable minimum regulatory requirements to be met without banks being forced to reduce lending (the denominator of the capital ratio).

In other words, if the minimum solvency ratio was set at 7%, that solvency ratio would be easier to meet if, in the expansionary phase, an additional capital buffer had been set aside over and above that 7%. This buffer would make it possible to absorb the increased capital requirements deriving from potential losses on the loan book, as economic growth slowed and borrowers' creditworthiness and ability to pay consequently worsened, accompanied by a decline in value of the collateral used to secure the loans. This absorption capacity would mean that banks would not need to significantly reduce their lending, as this would exacerbate the downturn and result in additional regulatory capital requirements, triggering a vicious circle that would be difficult to break.

There seems to be a general consensus regarding the macroprudential character of the countercyclical capital buffer, although there has been very little theoretical or empirical analysis of the extent to which this instrument is just a correction of the excess procyclicality caused by Basel 3 (and also Basel 2), as it requires capital proportional to credit risk measured using parameters that (without adjustments) are intrinsically procyclical (probability of default, rate of cure of non-performing loans, and collateral value). This should be examined carefully to avoid unrealistic expectations being placed on this new regulatory instrument and the way it is currently calibrated.

It is not clear, however, that everyone really understands (or genuinely accepts) the macroprudential character of the countercyclical capital buffer. Microprudential supervisors are often reluctant to lose control over regulatory capital in the first round, and short-sighted in the face of the greater deterioration in solvency of each of their supervised banks in the second round, due to the effect of the credit crunch on the economy and borrowers' worsening creditworthiness. The way to ensure the macroprudential character of the countercyclical capital buffer is by creating an automatic accumulation and release mechanism (such as that built into Spanish countercyclical provisions). The mechanism may not have the desired aggregate effects on credit if it is only automatic during the accumulation phase.[69]

Whatever the case, it seems legitimate to say that the countercyclical capital buffer is an heir to the Spanish countercyclical provisions, as it was inspired by them, with the Banco de España henceforth earning recognition for a regulatory instrument it invented a decade and a half ago. Nevertheless, it is an heir with a personality of its own. It differs from its predecessor, and is free of the accounting debate that accompanied the latter from its inception. However, it lacks the direct impact on the income statement and, therefore, on bank man-

69 Readers interested in this debate may consult the papers by Repullo et al. (2010) and Repullo and Saurina (2012) cited earlier, which argue that the capital buffer needs to have automatic mechanisms.

agement's incentives. Moreover, the lack of an automatic mechanism for its application may be a hindrance when it is needed once it has been accumulated.[70]

It should not be overlooked that the paper by Jiménez et al. (2016) clearly and rigorously demonstrates the positive impact on credit during downturns of a provision buffer created during the upswing: the reduction in credit as of 2008 and during the first recession was less pronounced in those institutions that had higher levels of countercyclical provisions at the start of the recession, softening the impact on the real economy. This evidence supports macroprudential policy based on increasing capital during upswings and reducing it during downturns, and, at the same time, highlights the macroprudential usefulness of countercyclical provisions and their compatibility with the countercyclical capital buffer.

1.5 The end of the road for countercyclical provisions

Countercyclical provisions and the troika

The Memorandum of Understanding (MoU) on Financial-Sector Policy Conditionality, signed in July 2012 by the European and Spanish authorities with a view to the restructuring and recapitalisation of a substantial part of the Spanish banking system (almost 20% in terms of total assets) with a loan of European funds included a broad set of conditions attached to the financial assistance and to the implementation of the restructuring and recapitalisation process.

Measure 22 of the MoU required that a policy document be submitted on enhancing the provisioning framework from 2013 when Royal Decrees 2/2012 and 18/2012, popularly known as the "De Guindos Decrees" after the minister who sponsored them, ceased to apply. Under those Decrees, Spanish banks were required to set aside one-off additional provisions to cover their exposure to real estate developers. In the absence of more specific details, the aim pursued by the troika – the name commonly used to refer to the group of authorities formed by the European Commission, the ECB and the European banking supervisor (EBA) responsible for monitoring compliance with the MoU, accompanied by the IMF as technical adviser – was unclear.

70 The report by the Group of Thirty, an international body of leading public and private-sector figures who meet to analyse international financial and economic issues, on this occasion in a personal capacity to discuss macroprudential policy and instruments (Group of Thirty (2010)), subtly acknowledges: the close relationship between capital and countercyclical provisions; the possibility that the market may not allow capital to be reduced in recessions, although it will allow provisions to be released, if these are based on an automatic rule; the need for the countercyclical buffer; its potential limitations when slowing the supply of credit, while undoubtedly building the banking sector's resilience to negative shocks; and the difficulty of calibrating it correctly.

The Banco de España prepared two documents to comply with Measure 22. The first, "The provisioning model in Spain: recent developments, lessons from the crisis and principles for the future" (December 2012), explained why it was not the right time to make changes to the provisioning system, with countercyclical provisions close to depletion as a consequence of the surge in non-performing loans in the first recession (2009) and specific provisions still growing owing to the continued increase in non-performing loans. This rise in NPLs was largely the result of the second recession (2012-2013), which had a similar impact on the Spanish economy as the first, along with the greater level of scrutiny of loan refinancings that some banks had used in the past partly to delay the recognition of non-performing loans.

In addition, it was difficult to change the Spanish provisioning system just as the international accounting standard-setters (the FASB and IASB), spurred on by the FSB and the G20, were starting to seriously consider in 2013 the possibility of abandoning the incurred loss provisioning approach in favour of one based on expected losses.

Nevertheless, the Banco de España's arguments failed to satisfy the European authorities, which asked for a second document to be submitted with a post-mortem analysis of the countercyclical provisions. That requirement gave rise to a highly detailed and rigorous analysis entitled "Spanish Dynamic provisions. Main Numerical Features" (2013), which is the basis for Chapter 3 of this book, did indeed meet with the troika's approval.[71]

These exchanges with the troika clearly reflected the stance adopted by the Banco de España vis-à-vis the countercyclical provisions, which was to "wait and see", largely because the decline in bank lending and the high specific provisioning requirements foreseen for 2013 and 2014 were not expected to rekindle countercyclical provisioning in the near term.

Radical change in accounting orthodoxy

In July 2014 the IASB, the chief accounting regulator outside the United States, published IFRS 9, to come into force on 1 January 2018. The new accounting standard, which sets allowances for loan impairment as a result of credit risk, includes a forward-looking valuation to estimate credit losses. The pressure exerted by the G20, the FSB and the BCBS had finally proved effective, although at the very end of the process of regulatory change that had started some five years earlier in the banking sector (Basel 2.5 and Basel 3).

71 The paper (Trucharte and Saurina (2013)) was published in the Banco de España's journal *Estabilidad Financiera.*

The accounting regulators thus abandoned the concept of incurred loss, finally adopting expected loss in its place. This paradigm shift at the IASB was followed by a similar move by the FASB, the US accounting regulator, although with a delay of at least two more years before its entry into force (and also with a difference in the way the new concept of expected credit loss is calculated). By calculating provisions based on expected credit loss (ECL), banks will be able to recognise credit losses earlier and, therefore, reduce the procyclicality of loan loss provisions, at least compared with incurred loss based provisions which, as mentioned earlier, coincide with the cycle and are, therefore, highly procyclical.

As was to be expected, this Copernican about-turn by accounting regulators did not go unnoticed by Poveda (2014). Almost fifteen years after the launch of the Spanish statistical provisions, under which latent risk reflected expected loss in the various loan portfolios, and a decade after the β parameter (included in the new general provision in 2005) replaced latent risk to cover long-run average losses, accounting regulators saw fit to adopt these pioneering approaches that had been advocated for so long by the Banco de España (Poveda, Prado) and the BIS (Borio). So much misunderstanding was finally overcome, so many (virtually) solitary struggles and so much time and effort spent trying to convince others were finally rewarded.

As noted above, the provisioning approaches proposed by the IASB and the FASB are not exactly the same. The FASB proposes a Current Expected Credit Loss (CECL) approach, set to come into force on 1 January 2020 or 2021, according to whether or not banks are listed. The two approaches – ECL and CECL – share the same aim, which is to provision credit risk in advance, that is, ahead of loan impairment. Under both approaches expected loss will be estimated based not only on past experience and present conditions but also on predictions of future conditions to be encountered by borrowers.

However, the two approaches calculate expected loss in a different way, neither of which, incidentally, coincides exactly with how it is calculated for capital requirements in Basel 3's internal models (although the BCBS is currently working on this). It would be rather ironic if, after waiting so long for accounting regulators to allow the concept of expected loss to be used to calculate provisions, banking regulators (responsible for capital requirements) were incapable of finding a convergent solution in that respect.

The FASB proposal, essentially and in simplified terms, is to calculate expected loss over the entire life of a loan, for exposures of all kinds. In other words, to calculate the amount of loan loss provisions, banks must calculate the expected loss on its entire loan portfolio, performing and non-performing. In technical terms, the FASB wants banks to use lifetime PD and LGD.

By contrast, the IASB bases its credit loss recognition model on a 12 month PD, except in the event of a significant increase in credit risk, when lifetime ECL should be used. In fact, the IASB uses a 3 stage model for the calculation of expected credit loss.

For performing loans (stage 1), a 12-month ECL is used, calculated by multiplying the 12-month PD by LGD. For underperforming loans (stage 2), that is, for loans that are not yet past due but that start to show signs of impairment (significant increase in credit risk), or where the deterioration of the borrower's macroeconomic environment points to an increase in its PD, full lifetime is ECL is recognised. This change may make a significant difference to provisioning requirements. Lastly, for credit impaired assets (stage 3), lifetime ECL will again have to be used; in this case the level of provisioning may not be too different if the loan has passed through stage 2, but it will be much higher if it has passed directly from stage 1. Overall, the FASB requires higher provisioning than the IASB, as it uses lifetime ECL in all cases. This radical change in methodology may have important consequences for the provisioning levels required of banks that adopt it, as is starting to be echoed in the international specialist press.[72]

It is worth emphasising that this is a fundamental shift in the accounting paradigm. Once it becomes effective, banks will be able to set aside forward-looking provisions, that is, they will be able to take into account future changes in the economic circumstances surrounding borrowers or homogeneous risk portfolios in order to calculate their effective economic value or recognise their level of impairment. Any change in the circumstances surrounding those portfolios will immediately alter the expected loss and, therefore, the value of the loan. The income statement will immediately reflect the expected credit loss, with no need to wait for clear evidence to emerge of impairment of each individual loan, as under the previous incurred loss approach. All of a sudden, Spanish countercyclical provisions, or at least one of their two components, had come out of the wings and taken centre stage.

As noted above, neither ECL nor CECL coincides with the formula used to calculate expected loss in Basel 3's internal models. Under solvency regulations a 12-month PD must be calculated, although long-run average PD may be used, together with a downturn LGD. By contrast, under accounting regulations, a 12-month or a lifetime PD is required, according to the stage or the regulator (IASB or FASB); in other words, a point-in-time (PIT) PD but with forward-looking information including macroeconomic factors, while the LGD is cycle neutral but also includes some forward-looking information (for more details, see BCBS (2016)).

72 See, for example, *Financial Times*, *Lex Column*, of 23 June 2016: "Loan loss accounting: managing expectations".

In the light of these differences, the expected loss obtained using the accounting approaches may be higher (or lower) than that obtained using the regulatory capital approaches. Ideally, the BCBS will be able to find a solution that will reduce that gap to a minimum, or even close it. Regarding the capital calculation, if provisions are to be used to cover expected losses and capital to cover unexpected ones, which is the principle that has been consistently upheld over the years by banking regulators, the logical solution would be to allow the calculation of expected loss under the accounting approach to be used in the calculation of regulatory capital requirements. Naturally, convergence and complete agreement between the two main accounting regulators would also be desirable, though this still looks to be a long way off, if it is ever achieved.

In any event, and even though the change in the accounting regulations has significant implications as to the impact on banks and in relation to the regulatory capital requirements, the step taken by the accounting standard-setters is a substantial improvement, at a conceptual level, between the reality of credit risk and its correct recognition and accounting. Early recognition of impairment of assets through recognition of expected (forward-looking) loss is fully in line with, and thus vindicates, the countercyclical provisions approach that we have described here and that has been championed by the Banco de España for the last fifteen years.

European harmonisation

The launch of the Banking Union, announced at the end of June 2012, marked, indirectly and unintentionally, the beginning of the end for Spanish countercyclical provisions. In November 2014 the Single Supervisory Mechanism (SSM) started to operate under the aegis of the ECB. The single banking supervisor will directly supervise significant banks of the euro area (some 130 banks making up around 80% of the euro area banking system), and will indirectly supervise all other banking institutions in the euro area (more than 3,000, but considerably smaller). The SSM requires a common supervisory culture across all 19 euro area countries, which will be far from easy to implement, considering the differences from one country to another at the start. The European supervisor has set in motion a process of harmonisation of supervisory practices that also covers regulatory definitions that are quite different from one country to another, considering the numerous national specificities involved.[73]

73 There are also significant differences in the capital ratio denominator, but the SSM has decided to address that issue at a later date, in part, apparently, owing to the large number of internal models used by institutions to calculate capital requirements.

This fast-moving process of elimination of national differences makes it difficult, in principle, to maintain accounting regulations for the Spanish banking sector that are different from those of the other euro area countries. Neither the majority of the supervisory authorities of the SSM member countries nor indeed the ECB have the Banco de España's accounting standard-setting powers, which means that the process of setting provisions is more flexible than in Spain and relies much more on the judgment of a bank's management team, subject to the scrutiny of the external auditor.[74]

Accordingly, the Banco de España has amended Annex IX of the Accounting Circular, which is where the specific rules on loan loss provisions are laid down and where, naturally, the countercyclical provisions are one of the main differences from practices in other countries. Needless to say, Spanish banks have for some time been campaigning – some more forcefully and vocally than others – in Frankfurt and in Madrid against Annex IX and, in particular, against countercyclical provisions.

We are clearly advancing towards greater European uniformity, albeit at different speeds according to the issues that give rise to disagreement at national level, and there are countercyclical capital requirements in place that may be activated from 1 January 2016 and may amount to up to 2.5% of risk-weighted assets. It is, therefore, extremely difficult to warrant an additional surcharge in the form of countercyclical provisions *applicable to Spanish institutions alone.* It is to be hoped that the next credit boom will be better managed than the last, now that there is a broad range of macroprudential instruments available and a new microprudential supervisor in place, interwoven into the central bank for the whole euro area.

Amendment of Annex IX and the end of the countercyclical provisions

Banco de España Circular 4/2016, amending CBE 4/2004 on provisioning requirements, was published in the *Official State Gazette* on 6 May 2016. The most significant aspect of CBE 4/2016 for the purposes of this book, namely countercyclical provisions, is that there was no mention of them whatsoever so, since the new Circular came into force on 1 October 2016, they are no longer a requirement for Spanish banks. The silence in CBE 4/2016 brings to an

74 An additional example of the problems faced by the Spanish countercyclical provisions can be found in the 2011 EU-wide stress test exercise when banks were not allowed to use them as loss absorption elements and, again, in the corresponding 2014 exercise when the recognition of the loss absorption capacity of these provisions was only partially accepted.

end one of the most noteworthy experiments in the international accounting (and regulatory) arena in the last two decades.[75]

The aim of CBE 4/2016 is to manage the transition from the Banco de España's traditional rule-based approach (Poveda (2016))[76] for loan loss provisioning requirements to the new IFRS 9 approach that will be shared by all the euro area countries and, in particular, by the SSM. This approach is based on provision estimates drawn up by banks' credit risk management teams and validated/verified by the external auditor, using the bank's internal methodology. For the time being, as indicated in the Circular, those estimates will be used to calculate impairment losses incurred, until the entry into force of IFRS 9 when the Accounting Circular will have to be amended once again to adapt it to the calculation of expected losses.

The move towards the expected loss approach will prompt banks to use their own internal models to calculate loan impairment, just as Basel 2 prompted them to develop internal models to calculate regulatory capital. The Banco de España now allows banks to use internal models/methodologies to calculate provisions, subject to a series of principles and minimum requirements. It also offers an alternative solution, or benchmark model, that banks that have not yet developed their own models may use for that calculation. In this respect, CBE 4/2016 marks a shift from the strict, minimum rule-based system in force to date to the principles for estimating specific coverage for non-performing assets and general coverage for performing exposures, with an alternative solution calculated on the basis of industry data and the experience of the Banco de España.

The information contained in the Central Credit Register (CCR), together with that extracted from the data furnished by banks for the successive stress tests conducted by the Banco de España using its own methodology (FLESB, Forward-looking exercise on Spanish banks) was an essential input for the design and calibration of the alternative solution, which determines the specific coverage for non-performing assets with a high level of granularity by risk segment (credit portfolio) and by time past due. The alternative solution also calculates loan loss provisions for performing exposures and for those under special surveillance, a new risk category.

By the time IFRS 9 comes into force there should be little difference, at an aggregate level, between the provisions calculated using the expected loss approach and the alternative

75 A silence that is in deafening contrast to the (on occasions thundering) noise that, as we have noted throughout this chapter, accompanied both the statistical and the new general provision through their creation and application.

76 The article also includes interesting comments on the timeliness and the content of CBE 4/2016.

solutions proposed in CBE 4/2016, given the granularity of the data used and the Banco de España's traditional parametrisation of latent risk, which as we have explained throughout this chapter is very close to the concept of expected loss. So the countercyclical provisions may have disappeared, but the calculation of expected loss continues, although for the time being, as per CBE 4/2016, coverage is of incurred losses.

The end of a chapter, but not the end of the story

In any event, the complete disappearance of the countercyclical provisions, not only from the stock of provisions but also from the legislation, will be the end of a compelling chapter in the history of Spanish banking regulation. But it will not be the end of the story for countercyclical regulation. Quite the opposite, in fact, as that story is still being written in other countries (such as Colombia, Costa Rica, Panama, Peru and Uruguay) where supervisory authorities are able to use countercyclical instruments and believe in their capacity to help safeguard banking system stability. The impact of the recent international financial crisis was felt, almost exclusively, by developed countries' banks whose supervisors, through the BCBS, have been imparting doctrine right, left and centre on best regulatory and supervisory practice. Emerging countries seem to have taken notice, strengthening their banking supervision, credit risk monitoring, provisions and capital levels. In the wake of the crisis, each banking sector and supervisor has had to take a long hard look in the mirror.

The story of countercyclical regulation now has a chapter on countercyclical capital buffers. As explained above, although there are significant differences between these buffers and countercyclical provisions they are, to some extent, in practice, their intellectual heir. So when talk turns to the disappearance of countercyclical provisions, there will always be the consolation that the countercyclical capital buffers are, at least in spirit, a reincarnation of those provisions, accompanied, in addition, by the paradigm shift in accounting that adoption of the expected loss approach in favour of incurred loss represents. Indeed, as explained in the epilogue, the two instruments are complementary and are perfectly compatible.

There will no doubt be new chapters in the story of countercyclical regulation featuring new instruments, some not even conceived of as yet, demonstrating the vitality of the macroprudential thinking sparked by the crisis, albeit long anticipated by the Spanish countercyclical provisions.

Chapter 2

Countercyclical provisions: operating mechanism

Spanish countercyclical provisions, originally known as statistical provisions, were first introduced in July 2000 as a way to improve the prevailing coverage of credit risk, which was a result of the general and specific provisions in use at that time. As explained in the preceding chapter, that provisioning system was highly procyclical, so the ultimate aim of the countercyclical provisions was to reinforce the solvency position of Spanish financial institutions in the short and medium term, inter alia by reducing that procyclicality.

As described in detail in Chapter 1, countercyclical provisions are a macroprudential instrument which, together with specific provisions, are designed to cover impairment losses on banks' credit portfolios from the time of origination of the credit. Specifically, dynamic provisions cover the latent expected losses in a portfolio that have not yet been identified in a particular loan, while specific provisions cover losses already incurred and, therefore, specifically identified.

Countercyclical provisions are applied to (calculated on) performing loans, that is, they cover unrealised losses on performing loans in the credit portfolio, while specific provisions are applied to non-performing loans, that is, they cover losses on the NPL portfolio.[1]

Although there are two fundamental points in time for the definition and implementation in practice of countercyclical provisions (their introduction in 2000 and their subsequent adaptation to International Accounting Standards (IAS) in 2005), the method used to calculate statistical provisions, which is applied to each bank at the individual level, is straightforward, transparent and automatic.

In general the calculation is based on two key elements: the first relates to credit portfolio growth (it is applied to new lending), while the second, which is responsible for the countercyclical nature of the mechanism, results from a comparison between the estimated latent risk

1 As a general criterion based on the EBA Implementing Technical Standard on forbearance and non-performing exposures, non-performing loans are those which are past-due more than 90 days or those in relation to which the borrower is unlikely to pay its credit obligations (principal and/or interest).

and the specific provision effectively set aside in the period. As will be analysed later in detail, the method initially used to calculate statistical provisions in 2000 was modified in 2005 to adapt it to the new international accounting rules. Subsequently, in the closing months of 2008, as the crisis emerged and specific provisions at Spain's deposit institutions grew almost exponentially, banks were allowed to use up almost all their countercyclical provisions.

In consequence, insofar as the operating mechanism of countercyclical provisions in Spain is concerned, there have been three distinct periods, which are examined in this methodological chapter.[2] The first is from 2000, when statistical provisions were introduced, and saw a gradual build-up of the stock of loan-loss provisions. The second is from 2005, when changes were made to adapt the provisions to the new European accounting legislation, which resulted in continued growth in the stock of countercyclical loan-loss provisions. And lastly the third is from 2008, when the banking crisis erupted in Spain and banks made use of the accumulated stock of provisions.

2.1 Countercyclical provisions: the introduction of statistical provisions and the accumulation period

Statistical provisions were first introduced and the stock of provisions started to build up in the third quarter of 2000. Accordingly, this was when statistical provisions as such came into operation (regulated by CBE 9/1999, amended by CBE 4/2000), complementing the existing specific and general provisions.

As to how they worked, from an accounting standpoint statistical provisions were charged, like an expense, to the income statement (profit and loss account) for the period, while from an economic standpoint the amount of that expense was calculated by estimating latent overall loan losses (latent risk) in the credit portfolio, specifically in a set of homogeneous risk categories.

In other words, the total credit portfolio was divided into six groups, each of which was considered homogeneous in terms of credit risk. Thus, each group constituted a different credit risk category, and as such was treated separately for the purposes of calculating the provision. The estimated latent risk was the result of multiplying the coefficients of the risk categories by the corresponding exposure. This form of calculation was known as the standard approach.

2 For a description of how countercyclical provisions work and how they have been modified over time, see Saurina (2009a, 2009c).

Under this approach, the Banco de España provided the coefficient values for each risk category, thus making the statistical provisions very simple to calculate. The coefficients were estimated based on an average of 14 years' experience (longer than an economic cycle).

For their part, institutions could obtain their own estimates for calculating the provisions, using methods based on their own experience of default and their expectations of losses by risk category (own internal models). These internal models, which some banks were able to use, had to be based on each bank's own experience of losses, integrated in its risk measurement and control systems, supported by a database that covered at least one complete economic cycle, and verified and approved by the Banco de España. In this case, the latent risk to be provisioned coincided with the losses estimated by institutions using their internal models.

The mechanics of the statistical provision (the flow of provisions and the stock of provisions building up) under the standard approach were as follows:

Formulas for the statistical provision (flow) and the stock of statistical provisions:

$$\text{Statistical provision}_t\,(\text{flow}) = \\ = \sum_{k=1}^{6} (\text{Risk coefficient}_k * \text{Credit volume of risk category}_{kt}) - \text{Specific provision}_t(\text{flow}) \qquad [1]$$

$$\text{Stock of statistical provisions}_t = \\ = \text{Stock of statistical provisions}_{t-1} + \text{Statistical provision}_t(\text{flow}) \qquad [2]$$

where t is the corresponding time period and k each of the homogeneous credit risk groups into which loans were classified.

Thus the statistical provision of each period was obtained by taking the sum of a series of coefficients, in ascending order of risk and, therefore, dependent on the inherent risk of each homogeneous credit category, multiplied by the volume of credit in that category. The amount of the specific provision set aside in the relevant period was then deducted from that sum (see Formula [1]). The stock of statistical provisions was simply the amount built up in successive periods (see Formula [2]). If the amount of the provision in any one year was negative, the stock in that period would be lower than in the previous period, thus starting the process of running down provisions. As may be appreciated, the method of calculating the countercyclical provision was very simple and automatic.

The above formulas clearly show that statistical provisions were effective (positive) if the result of multiplying the exposure in each risk category by the risk coefficients was higher than the specific provision. In that case, statistical provisions were charged to the income statement and the stock of provisions increased by the value of the provisions set aside.

However, if the difference with respect to the specific provision was negative, there would be no added provisioning. Rather, the stock of provisions built up would decline by the amount of the dynamic provision, with that amount being credited to the income statement, in all cases charged against the stock of provisions, and provided that there were sufficient provisions available. In no circumstances could the statistical provision stock be negative; in other words, it was not possible to remove from the stock of provisions (to be credited to the income statement) more than had been previously built up (charged to the income statement).

Clearly, therefore, the system was very straightforward and easy to understand: when specific provisioning levels were low (identified with good times, that is, with a low volume of non-performing loans, strong growth in credit to the private sector and strong GDP growth), statistical provisions were positive and, therefore, the statistical provision stock grew, while in lean times, identified with high specific provisioning levels (high volume of non-performing loans, zero or even negative growth in credit and economic activity), statistical provisions became negative and thus the stock of provisions declined. The negative difference was credited to the income statement, thus helping to alleviate the pressure exerted by the high specific provisioning levels on the income statement and, indirectly, on capital and solvency at the institution. The amount credited to the income statement was identical to the decline in the stock of provisions.

The characteristic feature of how statistical provisions were calculated under the standard approach was that credit exposures were classified by risk category and a coefficient was assigned to each category. The six homogeneous credit risk groups (dividing the credit portfolio into six risk categories, in ascending order of risk) and the associated coefficients were as follows:

a) Negligible risk. Loans in this category essentially consisted of general government lending, and were assigned a coefficient of 0%; that is, owing to their lack of risk, this set of exposures generated no statistical provisions.

b) Low risk. In general, mortgages with a loan-to-value (LTV) ratio below 80% and firms with credit ratings of at least “A” (granted by a recognised rating agency) or similar. These loans were assigned a coefficient, or latent risk, of 0.1% of the exposure.

c) Medium-low risk. This category included finance lease transactions not considered elsewhere, other collateralised exposures where the collateral value covered the amount of the loan, and additional transactions other than those classified in lower risk categories. The coefficient, or latent risk, of this group of exposures was set at 0.4%.

d) Medium risk. Loans not included elsewhere. The coefficient assigned was 0.6%.

e) Medium-high risk. This category was made up of consumer loans. The coefficient was set at 1%.

f) High risk. Credit card balances, current account overdrafts, credit account overruns. The coefficient assigned to this category was 1.5%.

As described earlier, statistical provisions were calculated by multiplying the coefficients indicated for each category by the volume of exposure in each, generating a period-by-period estimate of the latent overall loan losses in each homogeneous risk portfolio.

Moreover, as discussed earlier, when statistical provisions were introduced in 2000, they were complementary to specific and general provisions. Specific provisions covered nonperforming loans and were key in how statistical provisions (specifically, the countercyclical component) worked. General provisions were calculated by applying a certain percentage to performing loans, specifically to new lending (0.5% for mortgages and 1% for all other loans), determined as follows:

Formula for the general provision (existing before 2005):

$$\text{General provision}_t = \alpha * (\text{Credit}_t - \text{Credit}_{t-1}) \qquad [3]$$

where α = 0.5%, or 1%, depending on the type of loan (mortgages or other loans, respectively). These provisions are essential to understanding the new specification of statistical provisions following the changes made in 2005, as they were subsumed under the new concept of countercyclical provisions.

For a better understanding of how statistical provisions work and of their impact, included below is a simple example. A simulation exercise,[3] based on a simplified portfolio, is used to

3 Fernández de Lis, Martínez Pagés and Saurina (2000) present a different simulation exercise over a complete credit cycle.

CREDIT VOLUME AND DEFAULT RATE IN A SIMULATED PORTFOLIO EXAMPLE

TABLE 2.1

Risk category	Initial credit volume	Default rate (%)										
		Period										
		T	T + 1	T + 2	T + 3	T + 4	T + 5	T + 6	T + 7	T + 8	T + 9	T +10
1	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	20	0.05	0.05	0.05	0.04	0.06	0.07	0.09	0.12	0.16	0.21	0.27
3	20	0.20	0.19	0.18	0.17	0.22	0.29	0.38	0.49	0.64	0.83	1.08
4	20	0.30	0.29	0.27	0.26	0.33	0.43	0.57	0.73	0.96	1.24	1.61
5	20	0.50	0.48	0.45	0.43	0.56	0.72	0.94	1.22	1.59	2.07	2.69
6	20	0.70	0.67	0.63	0.60	0.78	1.01	1.32	1.71	2.23	2.90	3.77
TOTAL	120	0.29	0.28	0.26	0.25	0.32	0.42	0.54	0.70	0.91	1.17	1.51
Credit growth (%)			3.00	5.00	7.00	5.00	3.00	1.00	1.00	0.00	–2.00	–2.00

SOURCE: Own calculations.

show how statistical provisions (flow of provisions and stock of provisions) work and their impact on the income statement. The example assumes a credit portfolio in which each risk category has an equal volume of exposure (distributed proportionally among the different homogeneous risk groups). That volume (20 monetary units) is depicted in Table 2.1 in the column called "Initial credit volume".

The additional assumptions made to construct the example are as follows:

– The economy expands from period T up to T + 4. The growth rate then flattens up to period T + 7 when, in our example, the economy goes into recession. Credit growth in the cycle presents the values shown in the "Credit growth" row in Table 2.1.

– There is a default rate ("Default rate" per period columns in Table 2.1 which represent the percentage of loans reclassified from performing to non-perfoming in each period) which, up to period T + 4, declines by 5% each year, and thereafter rises by 30% each year. That default rate (which increases with the risk level of the risk categories) reproduces the highest associated risk for each type of homogeneous risk group.

HOW STATISTICAL PROVISIONS WORK IN A SIMULATED PORTFOLIO EXAMPLE

TABLE 2.2

Monetary units	Period										
	T	T + 1	T + 2	T + 3	T + 4	T + 5	T + 6	T + 7	T + 8	T + 9	T + 10
Coefficient * Credit volume	0.72	0.73	0.77	0.82	0.85	0.87	0.87	0.87	0.86	0.82	0.78
Statistical provisioning	0.37	0.39	0.43	0.48	0.39	0.25	0.07	–0.18	–0.49	–0.87	–0.83
Specific provisioning	0.35	0.34	0.34	0.34	0.47	0.62	0.81	1.05	1.35	1.69	2.11
Statistical provision stock	0.37	0.76	1.19	1.66	2.05	2.31	2.37	2.19	1.70	0.83	0.00
Income statement	0.48	0.50	0.52	0.56	0.59	0.61	0.62	0.62	0.63	0.62	0.12
Income statement (without statistical provisions)	0.85	0.89	0.95	1.03	0.98	0.86	0.68	0.45	0.14	–0.25	–0.71

SOURCE: Own calculations.

- The simulated income statement (profit and loss account) is a simplification in which the only income recorded is the estimated interest income from a hypothetical interest rate applied to the credit portfolio (1% for all risk categories) and the only expenses incurred are the specific and statistical provisions set aside.

- Specific provisions are calculated based on the default rate, so that each non-performing loan requires 100% provisioning.

- Statistical provisions are computed using the formulas described above: the result of multiplying the risk coefficients by the performing credit volume in each risk category, minus the specific provision made. The provisions add to the stock of provisions, provided the difference is positive. Otherwise, the difference is deducted from the statistical provision stock and credited to the income statement.

Using the above-mentioned data and assumptions, Table 2.2 shows how statistical provisions work and their impact on the income statement.

The result of multiplying the credit exposures by the risk coefficients (the "Coefficient * Credit volume" row in Table 2.2) rises every year, save in the last two periods when the example establishes a decline in credit (negative credit growth rate), even when a certain proportion of that credit is reclassified from performing to non-performing in accordance with the default rate established.

Underpinning this pattern is the fact that credit growth drives up the stock of performing loans, which offsets the impact of the loans that are reclassified from performing to non-performing. It should be noted that statistical provisions apply only to performing loans; thus, the product of the risk coefficients applies only to the performing exposures in each risk category. Non-performing loans are covered by specific provisions.

A further point to recall is that statistical provisioning is based not only on the product of the coefficients and credit volume, but also on specific provisioning (see "Specific provisioning" row in Table 2.2). The latter is virtually constant up to T + 3, as the default rate declines until that period but the credit growth virtually offsets that reduction via a larger amount of exposures reclassified from performing to non-performing. There is, therefore, a steady flow of NPLs in the initial periods that maintains the amount of specific provisioning almost unchanged. However, from T+4 onwards, the deterioration of the credit cycle as a consequence of a higher rate of defaults causes specific provisions to soar.

Statistical provisioning (see "Statistical provisioning" row in Table 2.2) also increases up to T+3 (as indicated, owing to the credit growth stipulated), and then declines thereafter, as the simulated economy heads into recession. At that moment, statistical provisioning becomes negative. This is the result of zero economic growth combined with a high volume of specific provisions.

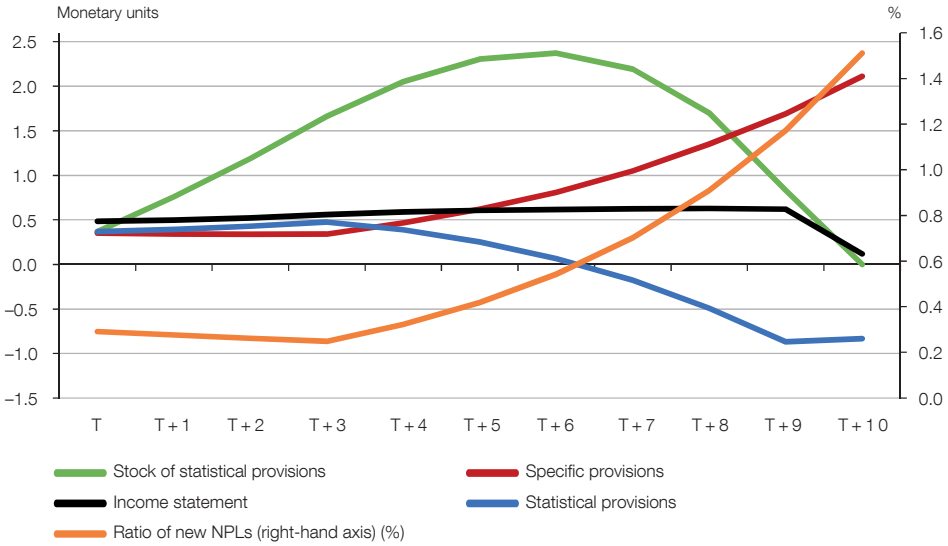
As a stock variable, the statistical provision stock (see "Statistical provision stock" row in Table 2.2) moves in step with the provisioning (flow) variable: it accumulates up to T+6, although at a gradually slowing pace (statistical provisions decrease in size from T+4 on) as the economic situation worsens, and thereafter (T+7) the stock of provisions begins to be released (the negative sign in the "Statistical provisioning" row in Table 2.2).

This has a patent impact on the income statement (see "Income statement" row in Table 2.2), which holds very steady, especially in the cyclical downturn, when the impact of the simulated crisis is not immediately felt. As indicated in the previous chapter, this income smoothing was one of the most criticised aspects of the original statistical provisions, and it influenced the new design of dynamic provisions in 2005.

The period during which the income statement withstands the impact of the simulated crisis is the time it takes for the statistical provision stock to be depleted, at which point it can no longer be used to offset specific provisions, which as a result of the worsening economic conditions are rising continuously and impacting directly on income. Definitive income statement deterioration comes in the last period, when the statistical provision stock is exhausted

TRENDS IN STATISTICAL PROVISIONS, SPECIFIC PROVISIONS, THE STATISTICAL PROVISION STOCK, AND THE INCOME STATEMENT IN A SIMULATED PORTFOLIO EXAMPLE

CHART 2.1



SOURCE: Own calculations.

and only the amount remaining at the start of that last period can be used to offset the impact on the income statement.

The effect described is best seen by analysing how the income statement row would have looked had there been no statistical provisions (see "Income statement (without statistical provisions)" row in Table 2.2). This row shows that, during the years of credit expansion, the bottom line of the income statement would have been much higher had there been no statistical provisions, but in the cyclical downturn, the adjustment would have been very harsh, with even losses being recorded from T+9 on.

Chart 2.1 depicts these findings. The stock of general provisions builds up while the economy permits, that is, while there is no significant deterioration in economic conditions (in the simulated credit portfolio example, until credit growth flattens and the rate of default reaches high levels). The pace of build-up of the statistical provision stock gradually declines as recession approaches. Specific provisions reflect incurred losses and, as such, are highly

procyclical, that is, they are low in cyclical upturns but they escalate as economic conditions deteriorate and the default rate starts to grow exponentially.

In turn, statistical provisions help to build up the stock in the expansionary phase of the cycle, but they subsequently turn negative, as specific provisions for each period begin to rise. It is precisely the growth in specific provisions (as a consequence of the cyclical downturn) that regulates the stock of provisions, as it depletes that stock.

The operating mechanism is such that when the economy is in the recessionary phase of the cycle and specific provisions are rising sharply, part of this volume of provisions can be offset by drawing on the stock of statistical provisions to help limit the impact on the income statement.

It is worth noting that the total volume of provisions (sum of specific plus statistical provisions) is relatively stable over the entire time horizon (T, T + 1, T + 2, etc.), thus meeting one of the main objectives set for the statistical provision: setting aside a steady volume of total provisions over time.

Finally, the income statement reflects the interplay discussed above between the various provisions, its profile remaining stable while the stock of statistical provisions lasts and these provisions exert their countercyclical effect. Once the economy slips into recession and the statistical fund starts to be released, losses are inevitable if the trough in the economic cycle proves to be persistent and the stock of provisions is exhausted.

It should also be borne in mind that the stock of provisions that could be accumulated was originally capped. This cap was set at three times the sum of the result of multiplying the risk exposures (i.e. the volume of outstanding credit) by the specific coefficients defined for the provisioning calculations. This cap, which sought to avoid a possible excess of statistical provisions so as to correct potential over-coverage of the credit portfolio, was also reflected in the adaptation of the provisioning regulation in 2005, when a floor was also established in order to define a minimum amount of coverage when drawing upon the stock of provisions.

It should also be noted that in practice a quarter of the total annual amount of the statistical provisions was set aside in each quarterly period. This was applied at the individual level to all the members of a consolidated group, and positive provisions at one member bank could not be offset against negative provisions at another. In fiscal terms, it should be recalled that, as explained in Chapter 1, the fact that statistical provisions were not a tax-deductible expense meant that a substantial quantity of deferred tax assets was built up during the years in which the stock of provisions accumulated.

2.2 Amendment of statistical provisions to adapt them to the new European accounting rules

The second distinct period in the history of countercyclical provisioning commenced with its amendment in the first quarter of 2005, when its conditions and operation were adapted to comply consistently with International Accounting Standards (IAS) requirements in terms of coverage for credit risk impairment, mandatory for credit institutions in the European Union.[4]

At that time the Banco de España issued Circular 4/2004, seeking to adapt credit institutions' accounts to IAS. Annex IX of this Circular set out the details of how credit institutions were to treat the coverage of credit asset impairment. In particular, it was stipulated that provisions for credit risk impairment losses as a whole should comprise the sum of provisions for losses incurred on specific transactions (specific coverage) and provisions for inherent losses or those not specifically assigned to each loan's insolvency risk (general coverage). It also dealt with provisioning for country risk.

Among other things, this change meant the discontinuation of what had previously been termed general provisioning (applicable to new lending, and set at 0.5% for mortgages and 1% for other lending) and the redefinition, under a new name, of the original statistical provision (now referred to as the new general provision). This was because, in order to adapt it to the new accounting standards, its new structure subsumed the former general provisioning that had been in effect until then.

In particular, it was stipulated that institutions were to cover inherent losses on debt instruments (in general, from the loan portfolio) classified as performing on the basis of past experience of credit impairment. For this purpose, losses incurred at the balance-sheet date and which were calculated using statistical procedures were considered to be inherent losses. This therefore concerns generic losses that had yet to be assigned to specific transactions, or in the language of IAS, losses which had already been incurred but which could not be assigned to a specific transaction.

Based on the foregoing, drawing upon its experience and empirical analysis of the banking sector, the Banco de España defined the way in which these inherent losses were to be calculated, together with the value of the parameters institutions were to use to calcu-

4 Regulation (EC) No. 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards requires all companies with debt or equity securities listed on a regulated market in the European Union to prepare IAS-compliant accounts so as to enhance their transparency and comparability.

late provisions for general or collective losses (inherent impairment losses on the loan portfolio).

A large part of the experience and empirical analysis mentioned above was obtained using the CCR managed by the Banco de España. This comprises highly granular information down to the borrower level, with an extremely low minimum reporting threshold (€6,000). All credit institutions operating in Spain are obliged to inform the CCR monthly of every credit transaction exceeding the reporting threshold. These features make the CCR a highly complete census of bank lending in Spain.

As an aside, for clarification purposes, it is worth noting that the high level of granularity of the information (loan-by-loan, bank-by-bank) and the length of the period it covers (approximately 30 years) have allowed the Banco de España to deepen its understanding of credit risk and its determinants considerably over the years. Among other things, analysis of CCR data allowed insolvency provision requirements to be calibrated following the adoption of IAS, and again more recently, in the wake of the latest reform to these provisions with Banco de España Circular 4/2016. It has also enabled a deeper understanding of the likelihood of loan default (Jiménez and Saurina (2004 and 2006)), of loan collateral and its determinants (Jiménez et al. (2006)), of credit lines (Jiménez et al. (2009)), and of the impact of changes in regulatory capital under the Basel accords (Saurina and Trucharte (2004 and 2007) and Repullo et al. (2009)). More recently, it has made it possible to analyse the mechanism of monetary policy transmission through banks' balance sheets and the credit risk channel (Jiménez et al. (2012 and 2014)), and to assess the impact of countercyclical provisions as a macroprudential instrument (Jiménez et al. (2016)).

Returning to the adjustment and modification of statistical provisioning beginning in 2005, the changes made meant that the calculation of the new countercyclical provision would comprise the following items:

a) the sum of the result of multiplying the (positive or negative) value of the change in the exposure in each of the risk categories over the period by a predetermined parameter α (referred to as the α component), plus

b) the sum of the result of multiplying the total value of the transactions included in each of the specified risk categories by a second parameter β, less the value of the specific provision charges in the period (referred to as the β component).

Thus, the formula for the new general provision, which subsumed the former general and statistical provisions (but with different parameters), was as follows:

Formula for the new general countercyclical provision:

$$\text{General provision}_t = \sum_{i=1}^{6} \alpha_i * \Delta\text{Credit}_{it} + \sum_{i=1}^{6} \beta_i * \text{Credit}_{it} - \text{Specific provision}_t \qquad [4]$$

where:

- $\text{General provision}_t$ is the flow of new general provisions set aside in period t,
- $\text{Specific provision}_t$ is the flow specific provisions set aside in period t,
- Credit_{it} is the volume of credit corresponding to the homogeneous risk category i in period t,
- $\Delta\ \text{Credit}_{it}$ is the change in the volume of credit in homogeneous risk category i in period t (equated with new lending),
- α_i and β_i represent the coefficients estimated by the Banco de España for the calculation of inherent losses and, therefore, for the practical application of the new general provisions. Each parameter had a different value depending on the homogeneous risk category to which it referred. These categories were virtually identical to those existing previously (in use since statistical provisions came into effect in the year 2000).

It is worth noting that the first summation in Formula [4] above, which could be termed the α term of the formula, is the part of the new general provisions that covered inherent losses from new lending. Indeed, the parameter α can be understood as an estimate of the average credit risk impairment (collective loss) one year ahead in a period that could be considered neutral from a cyclical perspective (the mid-point in the credit cycle).

For its part, the value of α varied depending on the risk category considered. Again, as previously, six homogeneous risk categories were defined, which, as mentioned, had virtually identical features (in terms of the types of loans included in each category) to those established in 2000. The big difference that arises in these categories, in comparison with the groups defined previously in Circular 9/1999, is that interbank lending is included in the

VALUES OF THE PARAMETERS OF THE NEW GENERAL COUNTERCYCLICAL PROVISION (%) (a) TABLE 2.3

Risk category	α	β
Negligible risk	0.00	0.00
Low risk	0.60	0.11
Medium-low risk	1.50	0.44
Medium risk	1.80	0.65
Medium-high risk	2.00	1.10
High risk	2.50	1.64

SOURCE: Own calculations.

a As commented in Chapter 1, the reparameterisation of the countercyclical provision in 2005 made it more sensitive to the credit cycle. This can be seen in the values of α which are higher in the new countercyclical (general) provision than in the former. Additionally, the values of β are approximately 10% higher than the corresponding coefficients of the original statistical provision.

"negligible risk" group of credit exposures. This group of transactions was not previously part of the pools of exposures subject to statistical provision calculations. The second change, which had a much bigger impact, concerns the value of the coefficient assigned. Given that this new α parameter applies to new lending, there is a difference in value with respect to the original statistical provision coefficient.[5]

In addition, given that the rate at which losses which have already been incurred but which cannot be assigned to a specific transaction translate into specific losses varies according to the point in the economic cycle, the α parameter needs to be complemented by a second parameter. Hence the introduction of the second coefficient, termed β (β component).

The values of β also vary depending on each homogeneous risk category, these being categories of the same type as those established for the α parameter. Specifically, depending on the credit risk category considered, its value is 0%, 0.11%, 0.44%, 0.65%, 1.1%, or 1.64% (for each risk category, in the same order as listed above for the case of α).

5 It should also be noted that the value of α is, in general terms, higher than the 0.5% and 1% coefficients assigned to the original general provision (before 2005). This made the new countercyclical provision more sensitive to the evolution of new lending, so as to mitigate criticism from accountants who saw the countercyclical provision as a way of smoothing income, as explained in Chapter 1.

Looked at this way, the β component may be understood as a historical average specific provision for each homogeneous risk group (expressed as a percentage of the total exposure volume in each risk category). By comparing β with the existing level of specific provisions, the rate at which collective inherent losses are turning into specific incurred losses can be determined and, ultimately, a provision generated that is clearly countercyclical.

The way countercyclical provisions operate assumes that risk is undervalued in periods of expansion (with high rates of credit growth), leading to low levels of specific provisioning and, therefore, to a positive difference between the average and actual specific provisions for the period. In periods in which specific losses are more readily assigned to individual loans (through high levels of specific provisions), the difference is inverted and therefore the β component subtracts from the α component and may even lead to negative countercyclical provisioning. This may, therefore, cause a reduction in the countercyclical provision stock that, as outlined above, accumulates from the provisions made in each period.

The β component specifically factors in the countercyclical element: during upturns it is positive and resources accumulate in the stock of loan loss provisions, and during downturns the opposite happens. There are clear parallels between the β parameter and the parameter measuring latent risk in the previous statistical provisioning mechanism.[6] By comparing these fixed parameters with the specific provisions, which fluctuate widely over the course of the cycle, dynamic provisions can be accumulated or released and the highly procyclical nature of the specific provisions can be dampened.

As in the case of the stock of statistical provisions, a cap was also imposed on the new general provision stock (see Formula [5]) to avoid excess coverage of the credit portfolio. However, one new feature that was introduced was a floor or lower threshold to ensure minimum coverage for performing exposures at any point in the credit cycle regardless of its intensity.

Formula for the stock of the new general provisions:

$$\text{General provision stock}_t = \text{General provision stock}_{t-1} + \text{General provision}_t \quad \text{(flow)} \qquad [5]$$

This established that the overall balance of the general provisions (general provision stock) should be between 33% (floor) and 125% (cap) of the total amount obtained by summing the

6 It should be noted that the values of β were 10% higher than those of the statistical provision (see Section 2.1). This was due to the objective set by the Banco de España of keeping the stock of countercyclical provisions accumulated prior to the application of the new European accounting standards in 2005 unchanged.

result of multiplying the amount in each risk category by its corresponding α parameter.[7] However, before continuing, it should be noted that the original 2005 definition of the provision stock was modified in December 2008 when the reference to the existence of a lower limit on the general credit risk provision stock was eliminated.

The purpose of this change was to make the general provisioning mechanism more flexible. However, this did not mean that there was no de facto lower limit on general provisions. Indeed, a letter sent by the Directorate General of Banking Regulation in December 2008 to the banking associations recommended that, depending on each entity's credit risk provisioning policy, some form of lower limit should be set, and that, in the Banco de España's judgment, it should not be less than 10% of the total amount resulting from summing the products obtained by multiplying the amount in each risk category by its corresponding α parameter.

Against this backdrop, the new general provisions came into effect and began to accumulate funds until the onset of the recession, which coincided with the third key period in the life of countercyclical provisions.

2.3 Release of countercyclical provisions

The third distinct period in the life of countercyclical provisions, now termed general provisions, began with the use (release) of the stock that had been accumulated. This period continued until these provisions finally disappeared from Spanish accounting rules following the publication of Banco de España Circular 4/2016, which came into force in the last quarter of 2016.

The accumulated stock began to be released as a result of the significant specific provisions Spanish banks had to make in the wake of the financial crisis that began in 2008. While stocks of provisions remained available, their use shored up institutions' crisis resilience and softened the impact of the credit crunch at the aggregate level (see Jiménez et al. (2016)), as is to be expected of a macroprudential instrument as specific and characteristic as countercyclical provisions.

Ultimately the stock of provisions was exhausted, having been used to absorb substantial losses recorded during the crisis, and countercyclical provisions were recently eliminated from Spain's accounting rules by Circular 4/2016, amending Annex IX of Circular 4/2004. The

7 Jiménez and Saurina (2006) offer a simulation over the whole credit cycle of a provision similar to that adopted in 2005. See Figure 1, in particular.

new treatment of credit risk impairment no longer includes countercyclical provisioning as we know it – and as described in this book – among its tools (i.e. with a countercyclical component and functioning differently depending on the point in the economic cycle).

Although countercyclical provisions have disappeared completely from the accounting rules as such, the concept of provisioning expected losses in performing portfolios has survived, and from the standpoint of prudential regulation it can be said that they have been replaced by a new tool which, up to a point, will play a similar role to that of the provision in conceptual terms, although its design, format and application are clearly different. This new tool is the countercyclical capital buffer, which was discussed in detail in Chapter 1.

It is therefore worth recalling that the publication of this book coincides with the international debate on the need to design and implement macroprudential policies whose ultimate aim is the stability of the banking system as a whole and its interaction with the real economy.

In this context, certain countercyclical tools have emerged in response to specific requests from various international economic and financial authorities with a view to mitigating the high degree of procyclicality potentially inherent in the functioning of the financial system. In particular, Basel 3's countercyclical capital buffer (CCyB), which has been incorporated into European legislation with the Capital Requirements Directive IV (CRD IV),[8] implemented in Spain by Banco de España Circular 2/2016, is a clear example of this. Nevertheless, proper calibration is required in order to implement tools of this kind correctly. The experience obtained in Spain with countercyclical provisioning may be considered extremely useful in this regard and a benchmark for the appropriate design and implementation of this kind of mechanism.

As this chapter has shown, countercyclical provisioning should be considered a macroprudential tool, which, like specific provisions, focuses on covering credit-portfolio losses. Specifically, it covers a portfolio's latent expected losses not yet identified in a specific loan, while specific provisions cover incurred losses, which have therefore been identified in specific loans.

By way of conclusion, it is worth recalling that this chapter has described the mechanism by which both versions of countercyclical provisioning operate, i.e. before and after the adoption of IAS by Spain and other European Union countries in 2005. Clearly other technical solutions implementing countercyclical provisioning would have been possible, but both versions of the Spanish proposal are of undisputable simplicity, transparency, clarity and effectiveness.

8 Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms.

Chapter 3

Countercyclical provisions: main numerical features and changes over time

This chapter focuses on describing the most notable numerical features of Spanish countercyclical provisions. As discussed earlier, dynamic provisions were first introduced in Spain in the year 2000. They were modified in 2005 to adapt them to IAS, and again in 2008, when their lower limit was removed to enable their release during the recent crisis. These provisions were in place until they disappeared on 1 October 2016.

This chapter is largely based on the work of Saurina and Trucharte (2013), one of the documents published by the Banco de España to comply with Measure 22 of the Memorandum of Understanding between the Kingdom of Spain and the European authorities on strengthening the stability of the Spanish financial system[1] (see "Countercyclical provisions and the troika" in Chapter 1).

Based on individual data from Spanish deposit institutions, presented below are the key figures which provide a context for the Spanish countercyclical provision.

3.1 Countercyclical provision stock: comparison with other balance sheet variables

Firstly, Table 3.1 shows the countercyclical provision stock for Spanish deposit institutions as a whole.[2] It should be noted that the structural change resulting from the entry into force of IAS across the European Union in 2005 also affected countercyclical provisioning. Although banks reported end-2004 data in line with the new accounting rules introduced by IAS, applying the new definition of the general provision, Table 3.1 presents 2004 data in the pre-IAS format, as banks were requested to do in order to be able to assess the impact of the change in accounting rules and ensure consistency of information. To make the series for the countercyclical provision consistent with the statistical

1 Memorandum of Understanding on financial-sector policy conditionality, signed between Brussels and Madrid on 23 July 2012, on specific measures to reinforce financial stability in Spain. Given the nature of the financial support provided to Spain, conditionality was mainly centred on the financial sector, and on banking in particular.

2 The figures in this publication are based on individual data obtained (business in Spain) from deposit institutions, on which the countercyclical provision was fundamentally based.

COUNTERCYCLICAL PROVISION STOCK IN TERMS OF CREDIT EXPOSURE, TOTAL ASSETS AND CREDIT RISK-WEIGHTED ASSETS (RWAs)

TABLE 3.1

Total deposit institutions

EUR millions and %

Year	Countercyclical provision stock (a)	Credit exposures (b)	Countercyclical provision / Credit (%)	Total assets	Countercyclical provision / Total assets (%)	RWAs (credit)	Countercyclical provision / RWAs (%)
2000	6,518	541,233	1.20	1,122,857	0.58	781,229	0.83
2001	9,063	612,264	1.48	1,227,209	0.74	851,535	1.06
2002	10,902	685,481	1.59	1,305,196	0.84	878,091	1.24
2003	13,880	796,625	1.74	1,463,261	0.95	969,031	1.43
2004	17,592	940,072	1.87	1,670,871	1.05	1,210,278	1.45
2005	18,209	1,208,368	1.51	2,071,543	0.88	1,452,756	1.25
2006	23,107	1,514,780	1.53	2,415,746	0.96	1,775,846	1.30
2007	25,836	1,729,981	1.49	2,825,122	0.91	2,020,213	1.28
2008	20,129	1,772,496	1.14	3,070,302	0.66	1,804,387	1.12
2009	10,411	1,681,722	0.62	3,090,315	0.34	1,827,388	0.57
2010	6,993	1,621,439	0.43	3,070,930	0.23	1,786,640	0.39
2011	4,878	1,491,681	0.33	3,158,246	0.15	1,708,434	0.29
2012	3,292	1,299,904	0.25	3,098,908	0.11	1,484,043	0.22
2013	2,481	1,150,474	0.22	2,715,823	0.09	1,335,023	0.19
2014	2,679	1,106,304	0.24	2,653,437	0.10	1,420,154	0.19
2015	2,561	1,109,854	0.23	2,556,951	0.10	1,468,351	0.17

SOURCE: Banco de España.

a Before 2005, the stock of countercyclical provisions was calculated as the sum of the statistical provision plus what was then known as the general provision, which was applied to performing loans granted during the period (new loans) and consisted of applying a percentage of 0.5% to new mortgage loans for house purchase and 1% to other new loans. In 2000, just before the statistical provision was introduced, the general provision amounted to around €5,300 million. From 2005 the stock of provisions refers to the new general provision made up of the α and β components.

b Credit exposure subject to countercyclical provisioning, but excluding exposures with negligible risk (first risk category), that is, exposures which are assigned a zero weight in the calculation of the provision.

provision (prior to 2005), the sum of the original statistical provision plus what was then known as the general provision is presented in the "Countercyclical provision stock" column. As described in the previous chapter, the general provision was a set percentage (0.5% or 1%, depending on the type of loan) applied to the change in performing loans during the period (new loans).

The table shows how, during the accumulation period (credit cycle upturn), a countercyclical provision stock of almost €26,000 million was built up. During the release period, starting in 2008 (economic and credit cycle downturn), the provision stock was practically depleted: by December 2015, it had been reduced by 90%, with respect to its peak (December 2007).

When describing the context of the countercyclical provision, it is also worth noting the relative weight it represented in terms of other balance sheet items. In this connection, Table 3.1 shows to what extent the countercyclical provision stock covered the stock of credit on the basis of which it was calculated, during the build-up and release periods. In terms of the total credit portfolio, the countercyclical provision represented more than 1% for much of the expansionary phase, and then fell significantly and almost disappeared during the first recession of the Spanish economy in the 21st century.

However, Table 3.1 gives the percent coverage of the exposures effectively used to calculate the provision, excluding from the calculation basis those loans classified in the "negligible risk" category, i.e. those exposures to which a zero weight was assigned and which thus did not contribute to the provision stock. Therefore, if we exclude from the total stock of credit the portion of lending classified in the homogeneous "negligible risk" category, which initially only included exposures to the public sector and to which interbank exposures were subsequently added as a result of the changes introduced in 2005), the relative weight of dynamic provisions came to represent almost 2%, before ultimately falling to around 0.25%.

Table 3.1 also shows the change which affected the countercyclical provision from 2005 on, not only as regards the definition of the basis for calculating the general provisions (interbank exposures were included in the calculation basis), but specifically relating to the calculation process itself (introduction of the α and β parameters), since this involved a break in the series. Indeed, the table shows how coverage of credit subject to countercyclical provisioning fell, albeit slightly, from 1.87% in 2004 to 1.51% in 2005, despite the increase in the existing provision stock. From then on, the percentage of coverage held steady at 1.5% (to a certain extent, due to the fact that a number of institutions had reached the upper limit set for the

provision stock or were very close to doing so) until the start of the depletion period in 2008. From then on, the coverage ratio fell steadily, stabilising at around 0.25% and finally disappearing completely.

Table 3.1 also shows the countercyclical provision stock as a percentage of total assets and of credit risk-weighted assets (credit RWAs). In terms of the total balance sheet, during the boom the stock of countercyclical provisions rose to around 1% of total assets. With respect to the volume of credit RWAs, countercyclical provisions in the boom represented between 1.25% and 1.5% of such assets, a significant volume bearing in mind that own funds of the highest quality (capital and reserves minus goodwill) accounted for around 6% of RWAs at that time. That said, these figures (1.5% of RWAs) still fell short of what is currently the potential maximum amount of the new countercyclical capital buffer (2.5% of total RWAs).[3]

Chart 3.1 compares the changes over time in the stock of countercyclical provisions, as defined in this chapter (see footnote to chart), and the stock of specific provisions. It also shows the differences between the original statistical provision (2000-2004) and the general provision which came into force in 2005.

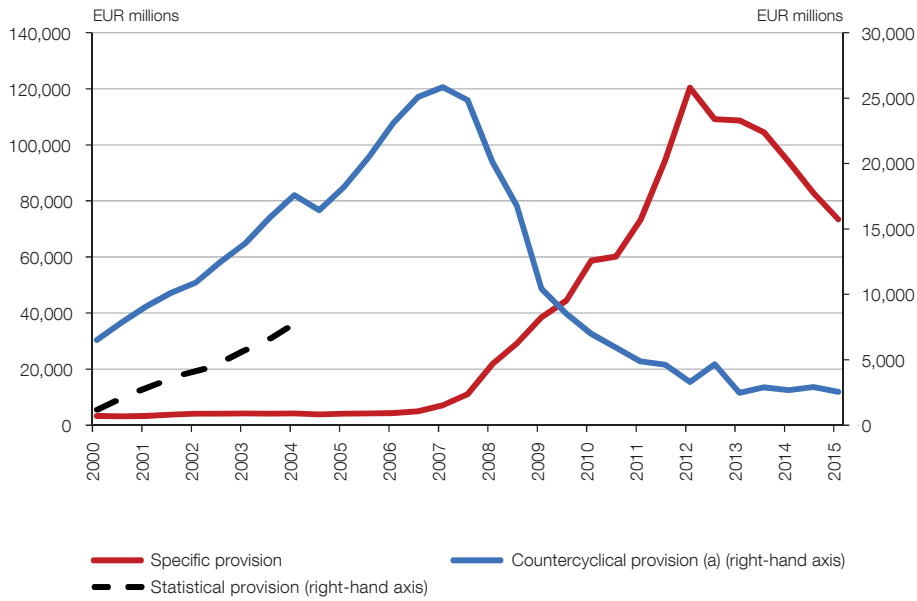
The black dotted line in Chart 3.1 is the original statistical provision introduced in 2000. In 2005, the general and the statistical provisions were merged into a single provision known as the new general provision. The slight downward movement in 2005 (shown in the chart) relates to the aforementioned technical adjustments made to the definition and functioning of the general provision to bring it into line with international accounting standards.

Here, we should bear in mind that the context in which Spain adapted to IAS, as described in Chapter 1, was not at all favourable to the existence of loan loss provisions for expected losses, and even less so to their countercyclical nature which, over time and as a result of the crisis, has gradually gained acceptance, although not in combination, but rather separately, in the form of two instruments: the new provisions based on expected losses (IFRS 9) and the countercyclical capital buffer. Indeed, the new provisioning requirements for banks will now be based on the concept of expected loss and will foreseeably come into effect in the European Union in 2018. Furthermore, the new Basel 3 regulatory capital requirements,

3 If only credit RWAs are taken into account, assuming they represent around 90% of total RWAs the maximum amount of the countercyclical capital buffer would amount to 2.8%.

CHANGES IN THE PROVISIONS FOR CREDIT RISK IMPAIRMENT CHART 3.1

Total deposit institutions (a)



SOURCE: Banco de España.

a The countercyclical provision prior to 2005 is presented in this chart as the sum of the original statistical provision plus a general provision (as it was then known) which was applied to performing loans granted during the period (new loans) and consisted of assigning a percentage of 0.5% to new mortgage loans for house purchase and 1% to other new loans. From 2005 on the countercyclical provision is made up of the α and β components as can be seen in Formula [4] in Chapter 2.

which are already being applied, include a new, countercyclical component in the form of the countercyclical capital buffer.

In any event, the above chart clearly shows the build-up of the countercyclical provision until it reached its peak in 2007. By contrast, with the onset of the crisis, the stock of specific provisions began to rise as a result of higher credit asset impairment, while the countercyclical provision stock, for its part, began to be released, thus contributing to alleviate the pressure that the higher provisions for credit risk exerted on institutions' income statements.

3.2 Stocks of countercyclical and specific provisions and associated coverage ratios

Chart 3.2 shows the coverage ratios of the specific and countercyclical provision stocks. The former applies to the total volume of impaired loans (non-performing), while the latter only applies to performing loans.

The reduction in coverage observed in 2005 is due to the change and, more specifically, to the new definition of the general provision, as discussed earlier. From 2005, interbank exposures (loans between banks) were also included as an additional risk potentially subject to countercyclical provisioning requirements, which led to an increase in the basis on which the provision was calculated, but not to an increase in the provision stock, since interbank exposures had been assigned a zero weight and were classified in the "negligible risk" category. If these exposures, which are not subject to countercyclical provisioning requirements, are not taken into account, the change from 2004 to 2005 is less marked and, consequently, the level of coverage is higher.[4]

In addition, if we focus only on the strictly countercyclical provision (the statistical provision), we can observe a more gradual build-up of the countercyclical provision stock in the early years.

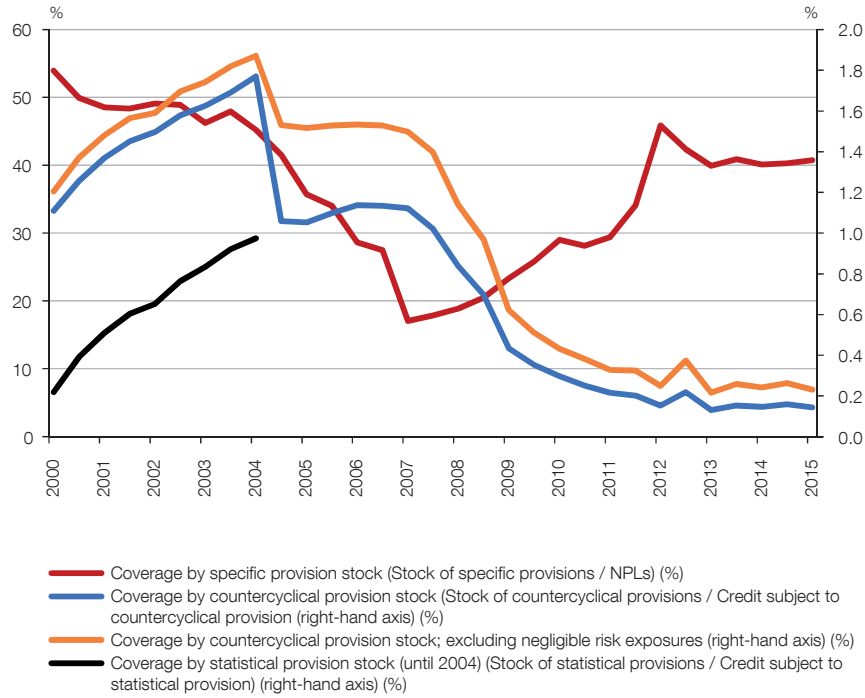
Chart 3.3 shows coverage of non-performing loans, taking into account all existing provisions (specific and countercyclical). It also shows the breakdown of the different provisions and their coverage with respect to the portfolio subject to specific provisions. Notably, the chart shows the high coverage of non-performing assets during the early years of the last decade, with coverage levels exceeding 200% for Spanish deposit institutions overall. This aggregate coverage of non-performing loans, so high during the boom and peak credit expansion, as explained in detail in Chapter 1, fuelled banks' interest in adopting IAS as an excuse to try to reduce or even remove the requirements of the countercyclical provision.

Table 3.2 compares the countercyclical provision with the specific provision and also shows the relative weight of the former with respect to the total stock of provisions for credit risk. The table shows the predominance of the countercyclical provisions in the total provision stocks (they peaked at almost 85% of total provisions) in the build-up phase.

4 Note that despite the severity of the crisis which affected the Spanish economy and its banking system, the NPL ratios of public sector lending and interbank exposures remained at very low levels, thus supporting the decision to include both types of exposure in the homogeneous "negligible risk" category, not subject to countercyclical provision.

COVERAGE BY PROVISION STOCKS CHART 3.2

Total deposit institutions (a)



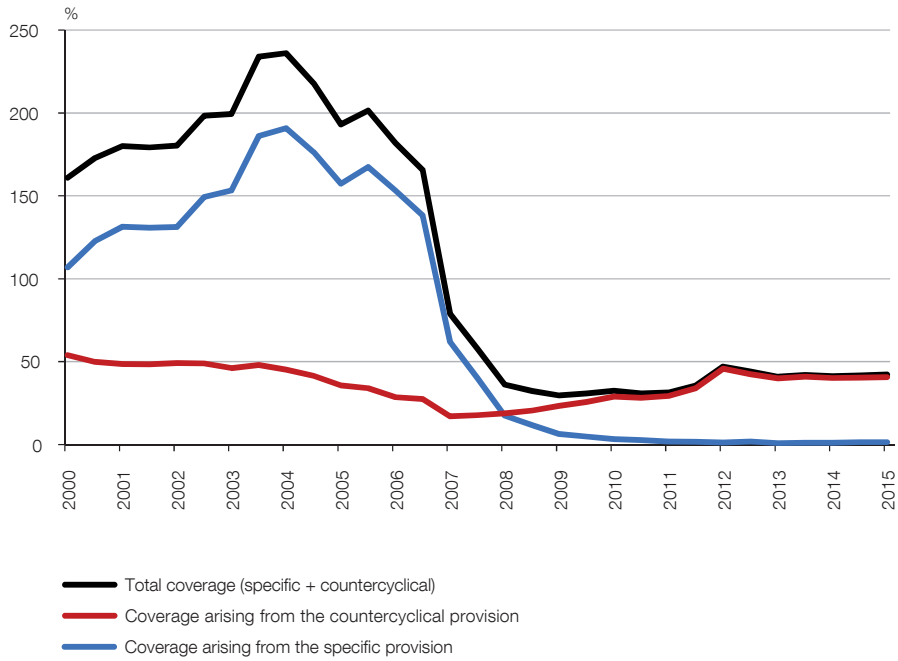
SOURCE: Banco de España.

a In this chart, the countercyclical provisions before 2005 are calculated as the sum of the statistical provision plus the general provision applied to performing loans granted during the period (new loans). The decrease in coverage in 2005 was due to the new scope introduced for the countercyclical provision. From end-2014, interbank exposures were also included as part of credit exposures to be taken into account in the category of risks subject to provisions. This change resulted in an increase in the basis for calculating the general provision but did not lead to an increase in the stock of provisions, since these exposures were assigned a zero weighting. Coverage by the statistical provision stock only includes the statistical provision from 2000 to 2004.

In contrast, during the release period (from 2008 on), it is the specific provision which has the highest relative weight in total provisions. This illustrates precisely the countercyclical nature of the Spanish dynamic provision, especially once the automatic release mechanism became effective in 2008. That is, when the volume of specific provisions began to be significant (start of the credit cycle downturn) and exceeded that of countercyclical provisions (β component), the difference between the provisions turned negative (see the countercyclical provision Formula [4] in the previous chapter).

COVERAGE OF NON-PERFORMING EXPOSURES CHART 3.3

Total deposit institutions (a)



SOURCE: Banco de España.

a The countercyclical provision prior to 2005 is presented in this chart as the sum of the original statistical provision plus a general provision (as it was then known) which was applied to performing loans granted during the period (new loans) and consisted of assigning a percentage of 0.5% to new mortgage loans for house purchase and 1% to other new loans. From 2005 on, the countercyclical provision is made up of the α and β components as can be seen in Formula [4] in Chapter 2.

This effect resulted in a reduction of the countercyclical provision stock in the amount of the aforementioned difference, which was then credited to the income statement, thus alleviating the pressure exerted by the increase in specific provisioning levels on the income statement and on solvency as a result of growing credit asset impairment. Later, with the worst of the recent crisis over and once the pressure on the income statement had eased and the dynamic provision's countercyclical purpose had been served, the relative weight of this provision with respect to the total provision stock was practically insignificant (3% of the total stock).

The above can be understood in terms of the α and β components of the countercyclical provision described earlier. Formula [4] set out in Chapter 2 with its corresponding α and β

BREAKDOWN OF PROVISIONS: SPECIFIC AND COUNTERCYCLICAL STOCK. RELATIVE WEIGHT OF THE COUNTERCYCLICAL PROVISION

TABLE 3.2

Total deposit institutions

EUR millions and %

Year	Specific provision stock	Countercyclical provision stock (a)	Total provisions	Countercyclical provision / Total provisions (%)
2000	3,288	6,518	9,806	66.5
2001	3,347	9,063	12,410	73.0
2002	4,080	10,902	14,982	72.8
2003	4,187	13,880	18,068	76.8
2004	4,168	17,592	21,760	80.8
2005	4,136	18,209	22,345	81.5
2006	4,319	23,107	27,426	84.3
2007	7,104	25,836	32,940	78.4
2008	21,726	20,129	41,855	48.1
2009	38,563	10,411	48,973	21.3
2010	58,711	6,993	65,703	10.6
2011	73,103	4,878	77,981	6.3
2012	120,391	3,292	123,683	2.7
2013	108,620	2,481	111,102	2.2
2014	93,882	2,679	96,561	2.8
2015	73,488	2,561	76,049	3.4

SOURCE: Banco de España.

a Before 2005, the stock of countercyclical provisions was calculated as the sum of the statistical provision plus what was then known as the general provision, which was applied to performing loans granted during the period (new loans) and consisted of applying a percentage of 0.5% to new mortgage loans for house purchase and 1% to other new loans. In 2000, just before the statistical provision was introduced, the general provision amounted to around €5,300 million. From 2005 the stock of provisions refers to the new general provision made up of the α and β components.

parameters provides an automatic mechanism for building up and releasing countercyclical provisions and is an essential aspect of its nature as a macroprudential tool, as actual data presented in the tables above show.

The α component (associated with new loans) contributed less and less to the countercyclical provision during the crisis period, when the volume of new lending was beginning to slow down. The β component, which, as mentioned earlier, is understood as the long-run average value of the specific provision (expressed as a percentage of the total stock of credit) and is responsible for its countercyclical nature, was below the high levels of specific provisioning in the most critical phase (downturn) of the credit cycle. Thus, the β

component remained below the volume of specific provisions required as a result of the credit asset impairment situation and this, together with the low contribution of the α component, led to negative countercyclical provisioning. This negative amount was subtracted from the stock, and automatically credited to the income statement.

It is clear that the mechanism is transparent, being a totally automatic rule-based tool, both during the upturn (build-up phase) and the downturn (stock depletion and release phase).

3.3 The countercyclical nature of the dynamic provision: impact on the income statement of Spanish deposit institutions

Chart 3.4 shows the countercyclical nature of dynamic provisions. It shows the economic growth rate (% change in GDP), the NPL ratio for private sector lending and countercyclical provisions as a percentage of loans with positive weightings on the basis of which the provision is calculated. The chart also shows how, during the upswing (GDP growth rates at around 3% and 4%), the statistical provision stock was built up, coinciding with a very low NPL ratio, which entailed very low specific provisioning needs.

The turning point, in 2008, is marked by declining economic activity and the start of release of the countercyclical provision stock that had been built up. In turn, the NPL ratio began to rise as a result of higher credit asset impairment, gradually increasing specific provisioning needs. The volume of write-offs reached such high levels (in 2012, provisions amounting to around €90,000 million were recorded) that the countercyclical provision practically disappeared in a significant number of institutions, with coverage falling to 0.25% of the assets on which the calculation of the provision was based.

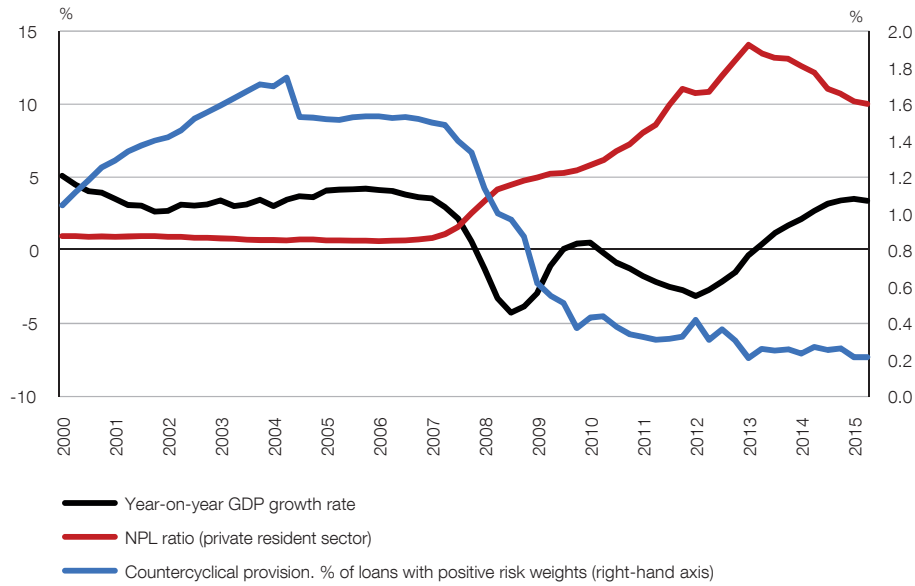
It is also interesting to note how challenging the dynamic provision has proved to be for institutions in terms of its impact on the income statement. To this end, the amount of funds, in terms of profits, that the countercyclical provision removed every year (or contributed, in times of recession) must be quantified. As explained in Chapter 1, this was one of the main reasons for the reluctance of Spanish banks to adopt countercyclical provisions, and subsequently, one of the main factors explaining the change in attitude and perception regarding the contribution made by these provisions to protect their solvency.

Thus, for deposit institutions overall, Chart 3.5 shows how the flow of countercyclical provisions removed (charged to income) between 15% and 20% of net operating income during the boom years. In terms of pre-tax profit, the relative weight of the provision during the boom was close to 30%, a very substantial amount, which the banking industry could use as a

COUNTERCYCLICAL NATURE OF THE DYNAMIC PROVISION. COMPARISON WITH THE CHANGE IN GDP AND THE NPL RATIO

CHART 3.4

Quarterly data. Total deposit institutions (a)



SOURCE: Banco de España.

a For consistency, the countercyclical provision for years prior to 2005 includes the statistical provision stock and the general provision stock then existing.

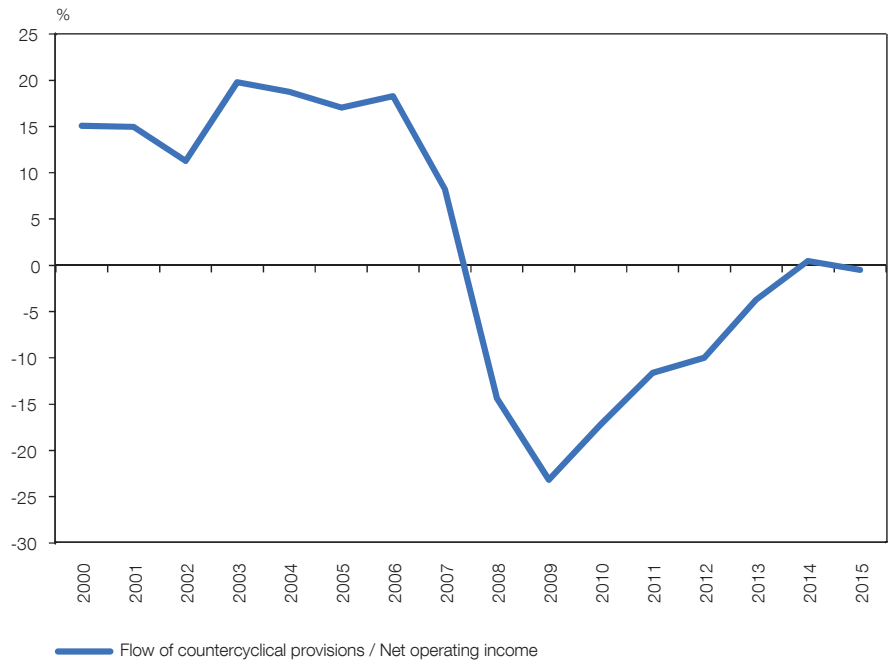
strong argument to justify its resistance to higher provisions and continuation of the gradual build-up of countercyclical provisions. This certainly left less room for the upward recalibration of the countercyclical provisions (α and β components, in the process of adapting the statistical provision to IAS).

However, during the release period, the stock of countercyclical provisions contributed to substantially alleviating pressure on the income statement. It should be borne in mind that the release period began in 2008, coinciding with the onset of the economic crisis and the significant credit asset impairment. Specifically, at times of great pressure on institutions' income statements, for example, in 2009, net operating income would have experienced a further decrease of almost 25% had it not been for the release of the countercyclical provision stock (see Chart 3.5). In terms of final income (pre-tax profit), the impact would have been greater, with a decrease of around 60%, had the general provision not existed.

IMPACT OF THE FLOW OF COUNTERCYCLICAL PROVISIONS ON THE INCOME STATEMENT (NET OPERATING INCOME)

CHART 3.5

Total deposit institutions (a)



SOURCE: Banco de España.

a Positive values in the chart indicate depletion of earnings from the income statement as a result of the recording of the countercyclical provision. Conversely, negative values indicate contributions (amounts credited to the income statement) due to release of the countercyclical provision.

In subsequent years, the situation was very similar to that described above. For example, in 2010, net operating income would have declined by an additional 17% had some of the specific provisions recorded that year not been offset by the release and use of the countercyclical provision stock. Pre-tax profit would have been 58% lower that year had the countercyclical provision stock not been released.

3.4 The countercyclical provision and its limits

Another aspect of the countercyclical provision that needs to be analysed are its limits. Table 3.3 provides information on these limits, showing the countercyclical provision stock, the theo-

retical upper limit calculated for each year, the difference between the limit and the existing stock, the amount of the provision that could have been set aside each year to reach the upper limit (as a percentage of the upper limit), the lower limit and the ratio of the provision stock to the lower limit. For reasons of consistency, the pre-2005 figures in the table for the countercyclical provision stock include the so-called statistical provision only. Otherwise, the calculation and consideration of limits would make no sense. Moreover, the lower limit only appears in the table from when it was established (2005).

According to the figures presented, for deposit institutions as a whole, the upper limit, set at 1.25 times parameter α multiplied by the volume of credit in each homogeneous exposure category, was not reached in any period. However this conclusion should be treated with some caution since the calculations of the limits presented in the table are based on the total aggregate figure for the system as a whole and not the individual figures for each bank.

There may be discrepancies between the results of this aggregation and the exact amount that would have been obtained if another type of aggregation had been used or if the institutions had been analysed one by one. In fact, a substantial number of individual institutions did, at certain times, reach the upper limit set for the countercyclical provision stock, and therefore made no further provisions.

It should be noted that as credit grows, the upper limit to the countercyclical provision also rises. At the same time, the degree of proximity to the upper limit also depends on the evolution of the specific provisions of each institution (the β component of the formula), i.e. on the difference between the product of β and the volume of credit and the specific provisions.

With this caveat in mind, it can be seen that it was in 2005 and 2006 that the existing aggregate stock of provisions was closest to its upper limit (only 5% below it). At the total system level the extra provision that could have been set aside before reaching the upper limit was around €1 billion.

As for the lower limit, as mentioned above, it was removed in 2008. The purpose of this was to give institutions greater leeway to manage the increasing amount of non-performing loans on their balance sheets. Having very high current credit losses (i.e. very substantial growth in specific provisions) and, at the same time, a high level of countercyclical provisions to cover potential future losses would seem to have made no sense. The intention was thus to enable institutions to use virtually the whole of their countercyclical provision stock to cover the increase in losses that began to take place as a result of the start of the crisis and the classification of a significant part of their credit assets as non-performing.

UPPER AND LOWER LIMITS TO THE COUNTERCYCLICAL PROVISION TABLE 3.3

Total deposit institutions

EUR millions and %

Year	Countercyclical provision (a)	Upper limit	Gap between the upper limit and the stock	Gap as % of upper limit	Lower limit (b)	Stock of provision / Lower limit (%)
2000	1,184	7,312	6,127	83.8		
2001	3,117	8,053	4,936	61.3		
2002	4,464	8,678	4,215	48.6		
2003	6,645	9,596	2,951	30.8		
2004	9,161	10,881	1,720	15.8		
2005	18,209	19,028	819	5.2	5,023	3.62
2006	23,107	24,322	1,215	5.8	6,421	3.60
2007	25,836	27,768	1,932	7.5	7,331	3.52
2008	20,129	27,837	7,708	27.9	7,349	2.74
2009	10,411	25,692	15,281	59.7	6,783	1.53
2010	6,993	24,656	17,663	71.8	6,509	1.07
2011	4,878	22,533	17,655	78.3	5,949	0.82
2012	3,292	19,798	16,506	87.1	5,227	0.63
2013	2,481	17,198	14,716	88.3	4,540	0.55
2014	2,679	16,640	13,961	86.7	4,393	0.61
2015	2,561	16,948	14,387	88.8	4,474	0.57

SOURCE: Banco de España.

a For reasons of consistency, the pre-2005 figures for the countercyclical provision stock include the so-called statistical provision only. Otherwise, the calculation and consideration of limits would make no sense. The lower limit is shown from 2005, the year it was established.

b The lower limit is set at 33% of the sum of the products of the credit volume of each risk category and its respective α parameter for the whole of the period analysed (2000-2015).

As seen in Table 3.3, the amount of both the upper and lower limits peaked in 2008 (at €27,837 and €7,349 million respectively). This was because the stock of credit on the balance sheets of deposit institutions began to decline thereafter (deleveraging).

In addition, from 2011, the volume of the countercyclical provision stock is clearly below the 33% lower limit, showing the pressure institutions were under as a result of the crisis. Institutions thus took the recommendation for the provision stock (10% of the product of parameter α and the credit corresponding to each exposure category) to its lower extreme.

Although there is no breakdown given in Table 3.3, at the aggregate level the provision stock did not fall below the lower threshold of 10%. However, as already mentioned in relation to the upper limit, the evidence at the aggregate level does not necessary mean that there were no institutions with a provision stock below this limit at the individual level.

A more detailed picture of the situation with regard to the limits set is provided by an analysis at the individual institution level. This shows the dispersion of institutions according to the limits in place and also, therefore, the changes in the numbers of institutions, and their relative importance in terms of exposure, according to how far they were from reaching the upper limit of the provision stock during the period of credit expansion and how close they were to the lower limit during the years of recession.

Table 3.4.A shows, for the years 2005-2013, how the gap between the provision stock and the upper limit evolved in terms of the number of institutions (as a percentage of the total) and the volume of exposure (as a percentage of total credit subject to countercyclical provisioning). During the peak provisioning years (2005, 2006 and 2007) it can be seen that around three-quarters of all institutions had a provision stock exceeding 75% of the limit, with around 40% of all institutions having stocks equal to the upper limit.

At the other end of the distribution, the percentage of institutions whose countercyclical fund was below 50% of the upper limit was around 25% in the years of peak provisioning. This percentage began to grow from 2008, reaching almost 60% of institutions with the release of the countercyclical provision, and the stock was therefore increasingly distant from the upper limit.

It is perhaps more informative and meaningful to analyse Table 3.4.A in terms of the volume of exposure of institutions and how this (as a percentage of the total stock of credit) is distributed according to whether or not the upper limit of the provision stock acted as a binding constraint on the institutions.

Specifically, institutions whose provision stock was between 75% and 100% of the upper limit in 2005, 2006 and 2007 accounted for more than 90% of the total exposure of all institutions. This gives a very clear idea of what was discussed in relation to Table 3.3. In terms of volume of exposure, the institutions were practically at the upper limit. In fact, in 2005 and 2006 the exposure of those institutions whose countercyclical provision stock was at the upper limit (100%), represented more than half of the total volume of credit subject to countercyclical provisioning.

Conversely, from the moment the provision stock began to be released, the pattern of the trend mentioned above completely changes and the percentage of credit exposure accounted

COUNTERCYCLICAL PROVISION STOCK AS % OF UPPER LIMIT TABLE 3.4.A

Number of institutions and volume of exposure, as a percentage of the total

Year	Number of institutions as % of total number of institutions (a)			
	Stock of 0-50%	Stock of 50-75%	Stock of 75-100%	Stock of 100%
2005	22	4	34	40
2006	23	3	33	41
2007	25	3	34	38
2008	33	9	33	26
2009	43	8	25	23
2010	52	5	24	19
2011	56	5	17	22
2012	59	7	18	16
2013	59	6	18	17

Year	Volume of exposure as % of total exposure subject to the provision (a)			
	Stock of 0-50%	Stock of 50-75%	Stock of 75-100%	Stock of 100%
2005	8	1	35	56
2006	8	1	40	52
2007	8	1	54	37
2008	18	33	38	11
2009	66	13	14	7
2010	79	9	4	7
2011	83	10	3	5
2012	81	3	9	7
2013	90	1	3	6

SOURCE: Own calculations.

a Rows may not always add up to 100 due to rounding.

for by institutions whose provision stock is less than 50% of the upper limit starts to gain in weight. To such an extent that, in 2013, those exposures whose provision stock was less than half of the upper limit accounted for 90% of total exposures.

The above analysis at the individual institution level is repeated in relation to the lower limit, for the period 2008-2013 when the provision stock was allowed to be less than

COUNTERCYCLICAL PROVISION STOCK AS % OF LOWER LIMIT TABLE 3.4.B

Number of institutions and volume of exposure, as a percentage of the total

Year	Number of institutions as % of total number of institutions (a)			
	Stock of over 33%	Stock of 20-33%	Stock of 10-20%	Stock of below 10%
2008	75	1	2	21
2009	67	5	6	22
2010	59	6	10	26
2011	53	5	11	32
2012	49	4	8	39
2013	47	4	10	39

Year	Volume of exposure as % of total exposure subject to the provision (a)			
	Stock of over 33%	Stock of 20-33%	Stock of 10-20%	Stock of below 10%
2008	89	1	2	7
2009	58	6	27	9
2010	30	12	26	32
2011	28	4	35	33
2012	20	4	28	48
2013	13	3	40	44

SOURCE: Own calculations.

a Rows may not always add up to 100 due to rounding.

33% of the product of parameter α and the volume of exposure for each category defined in 2005.[5]

Table 3.4.B shows the evolution of the countercyclical provision stock relative to its lower limit at the individual institution level as a percentage of both the total number of deposit institutions and the total volume of exposure, in a similar way to Table 3.4.A in relation to the upper limit.

5 As explained in Chapter 1, a new limit of 10% was recommended, albeit without any regulatory compliance obligation.

In particular, it can be seen that in 2008 the percentage of institutions whose provision stock was above the lower limit (33% of the product of α and the volume of credit classified in each category) was 75%. This percentage began to decline constantly thereafter, and by 2012 more than 50% of institutions had a provision stock below the lower limit. Moreover, it can be clearly seen that the largest percentages of institutions in 2012 and 2013 had a provision stock below 10% of the product of α and the volume of credit subject to provisioning. Both in 2012 and in 2013 these institutions amounted to almost 40% of the total number of institutions.

As was the case when the upper limit was analysed above, when the percentage of exposure volume with a provision stock above and below the lower limit is observed, the results are even clearer. Before the recession had led to a mass release of provisions, i.e. in 2008, almost 90% of the total exposure subject to provisioning was at institutions whose provision stock was above the lower limit. As the crisis worsened and the countercyclical provision began to be used up, this percentage began to decline very notably and rapidly.

Thus, in 2013 the volume of exposure of institutions whose provision stock was below the 33% lower limit represented 87% of total credit subject to provisioning. Moreover, in the same year, those institutions with a provision stock below the 10% limit accounted for 44% of the total volume of credit subject to provisioning.

3.5 Distribution of exposures and coverage by risk category

Apart from its upper and lower limits, another interesting aspect of the countercyclical provision to highlight is the distribution of exposures across the six risk categories established for its calculation. Table 3.5 shows this distribution, and it can be seen how the relative volume of credit in each of the different risk categories has evolved over time.

In particular, the weight of the exposures in the "negligible risk" category, relative to total credit exposures, increased from 8% in 2000 to almost 40% from 2012 on. However, it should be noted that interbank exposures were included in this category from 2005, which increased its weight with respect to the other categories. The increase, as seen in Table 3.5, is striking and amounts to around 25 percentage points. In 2012, there was another discrete increase, of 6 percentage points, directly related to the increase in the sovereign exposures of Spanish institutions during the crisis and indirectly related to the decline in the weight of the other categories, especially the medium-low risk one, partly as a result of the deleveraging that continued to take place across the banking system.

DISTRIBUTION OF EXPOSURES BY RISK CATEGORY (%) (a) TABLE 3.5

Total deposit institutions

Year	Negligible risk	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
2000	7.9	29.8	16.2	37.0	7.5	1.5
2001	7.5	31.5	17.3	34.7	7.3	1.5
2002	5.9	33.2	19.8	33.3	6.3	1.4
2003	6.7	33.9	24.0	28.9	5.1	1.3
2004	5.4	35.8	26.4	26.6	4.6	1.2
2005	30.3	26.8	20.0	19.5	2.7	0.8
2006	25.5	26.9	22.5	21.6	2.7	0.8
2007	24.9	27.2	22.7	21.6	2.7	0.8
2008	26.2	28.8	20.7	21.1	2.4	0.8
2009	30.0	29.5	19.1	18.8	1.9	0.7
2010	31.2	29.7	17.4	19.2	1.8	0.8
2011	33.9	29.4	15.2	19.2	1.6	0.7
2012	39.9	27.3	11.1	17.4	3.6	0.7
2013	39.5	28.8	10.4	16.9	3.7	0.7
2014	39.8	28.0	10.9	18.2	2.4	0.7
2015	38.0	27.9	10.9	19.6	2.7	0.7

SOURCE: Own calculations.

a Rows may not always add up to 100 due to rounding.

As regards the exposures included in the medium-risk categories (medium and medium-low), their relative weight in the total portfolio has declined in importance, varying between 37% and 17% (since the creation of the statistical provision in 2000) and between 26% and 11%, respectively.

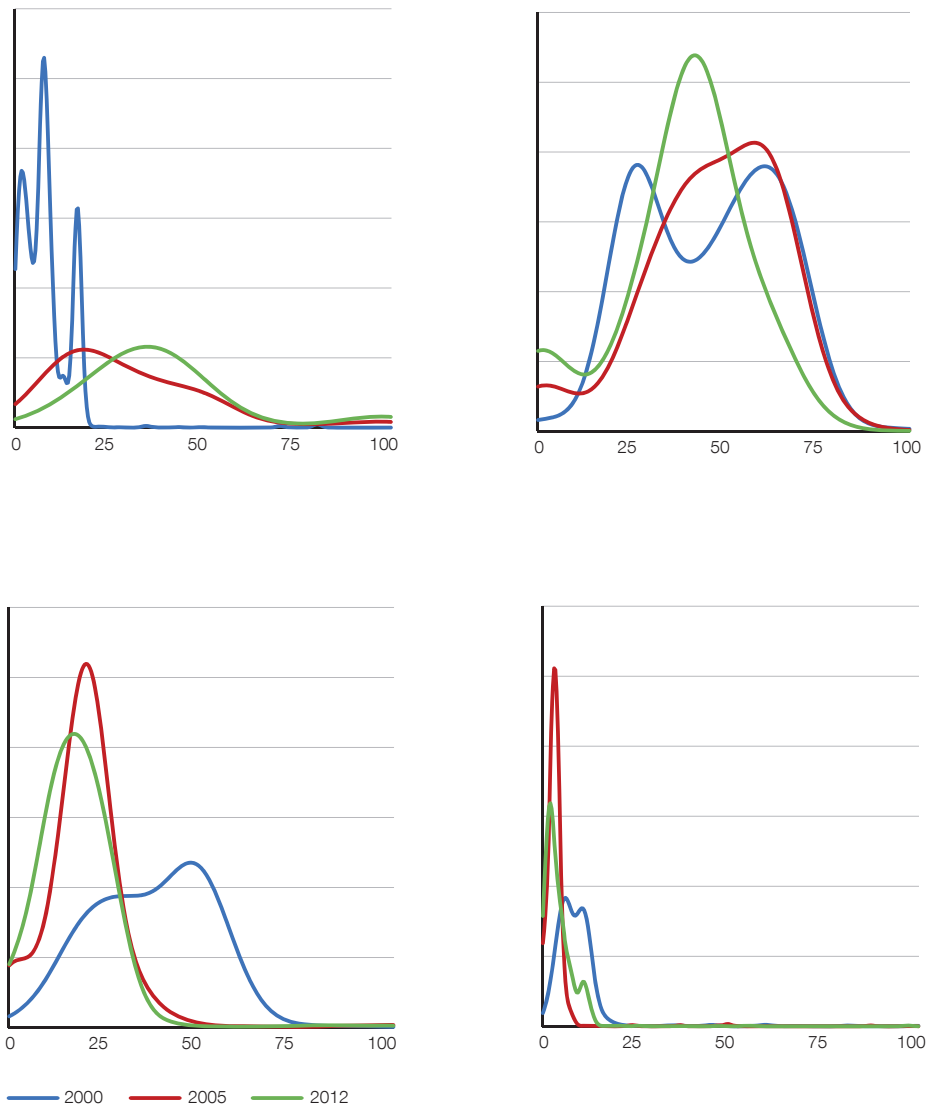
For the high risk categories (high and medium-high) the behaviour of the relative weights has been similar, although the fall was greater (from 7% to 3% and from 1.5% to 0.7% respectively).

Chart 3.6 shows the distribution of institutions according to the relative weight of each risk category with respect to the total credit portfolio in three different time periods

DISTRIBUTION OF INSTITUTIONS ACCORDING TO THE RELATIVE WEIGHT OF EXPOSURES BY RISK CATEGORY (FROM LEFT TO RIGHT AND TOP TO BOTTOM): NEGLIGIBLE RISK, LOW RISK (LOW AND MEDIUM-LOW), MEDIUM RISK AND HIGH RISK (MEDIUM-HIGH AND HIGH). 2000, 2005 AND 2012

CHART 3.6

Total deposit institutions



SOURCE: Own calculations.

(2000, 2005 and 2012).[6] Thus, for the category known as "negligible risk", it can be seen that in 2000 the distribution obtained has a high density of institutions at low percentages (relative weights) of this category with respect to the total portfolio. However, from 2005 onwards, and as a consequence of the additional inclusion of interbank exposures in this category, the distribution of institutions shifts to the right showing higher densities of institutions with higher percentages of exposure in this category with respect to the total portfolio.

For exposures classified as low risk (low and medium-low risk) the distribution of institutions evolves over time towards something resembling a normal distribution function. That is to say, in 2012 the distribution of institutions closely resembles a normal distribution, with the highest density of institutions at average values (around 45%). In other words, there is a higher density of institutions for which the weight of the low-risk portfolios (low and medium-low) together amounts, with respect to the total portfolio, to around 45%, while the more extreme values (very high or very low relative weights of these portfolios) are associated with lower densities (smaller number of institutions with this characteristic).

With respect to the medium-risk category, a shift is seen in the distribution of institutions towards lower relative weights for this portfolio with respect to the total portfolio over time. That is to say, institutions have been seeing how the weight of their exposures in the medium-risk category with respect to the total portfolio has been declining over time relative to the weight of the exposures in other categories.

The above effect is observed more clearly for the high-risk and very-high-risk categories, which display a greater concentration of institutions over time at progressively lower relative weights for these portfolios.

Given that the countercyclical provision requirements were nil for sovereign and interbank credit exposures, it would be useful to exclude both these types of exposure (classified in the "negligible risk" category) from the analysis and to analyse the distribution of exposures without this category. If we do this, the new distribution of exposures obtained (see Table 3.5.Bis) has most of the exposures of Spanish deposit institutions located in the low and medium risk exposure categories (which account for more than 75% of the total exposures

6 Chart 3.6 shows the density function (or frequency distribution) for all deposit institutions of the relative weight of each risk category with respect to the total portfolio subject to the countercyclical provision, i.e. of their greater or lesser specialisation in each segment of the credit business. This function was approximated by means of a Kernel estimator, which enables a non-parametric approximation of the density function to be made, providing a continuous and smoothed graphic representation of such function.

DISTRIBUTION OF EXPOSURES BY RISK CATEGORY (%) (a) (b) TABLE 3.5.BIS

Total deposit institutions

Year	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
2000	32.4	17.6	40.2	8.1	1.7
2001	34.1	18.8	37.6	7.9	1.6
2002	35.3	21.0	35.4	6.7	1.5
2003	36.4	25.7	31.0	5.5	1.4
2004	37.9	27.9	28.1	4.8	1.3
2005	38.4	28.6	27.9	3.9	1.1
2006	36.1	30.2	28.9	3.6	1.1
2007	36.3	30.2	28.8	3.6	1.1
2008	39.1	28.0	28.5	3.3	1.0
2009	42.1	27.3	26.8	2.8	1.1
2010	43.1	25.3	27.9	2.6	1.1
2011	44.5	23.0	29.0	2.4	1.1
2012	45.4	18.4	29.0	6.0	1.1
2013	47.6	17.2	27.9	6.2	1.1
2014	46.5	18.0	30.3	4.0	1.2
2015	45.1	17.6	31.7	4.4	1.2

SOURCE: Own calculations.

a Excluding "negligible-risk" exposures.
b Rows may not always add up to 100 due to rounding.

in 2015). The evolution of the distribution since the creation of the countercyclical provision shows an increase in the relative weight of the low-risk category at the expense of a reduction in the medium risk and medium-high risk category, since the medium-low risk and high risk categories remain practically unchanged.

In any case, it should be noted that in 2005 the medium-low risk category had a relative weight that was 10 percentage points higher than in 2000 and that this weight gradually fell from 2008, back down to its initial 2000 level. Collateralised loans to property developers which did not fulfil the requirements to be included in the low-risk category were included in this category. The deleveraging in relation to this type of loan as a result of the crisis for deposit institutions is evident in the evolution of this risk category in Table 3.5.Bis.

DISTRIBUTION OF THE COUNTERCYCLICAL PROVISION BY RISK CATEGORY (%) (a) TABLE 3.6

Total deposit institutions

Year	Negligible risk	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
2000	—	7.2	15.6	53.6	18.1	5.5
2001	—	7.8	17.1	51.4	18.1	5.6
2002	—	8.4	19.9	50.4	15.9	5.4
2003	—	9.1	25.6	46.4	13.6	5.4
2004	—	9.8	28.9	43.7	12.5	5.0
2005	—	17.3	35.3	39.3	6.0	2.1
2006	—	16.2	36.7	39.5	5.5	2.1
2007	—	16.3	36.8	39.5	5.4	2.0
2008	—	18.0	35.2	39.5	5.5	1.9
2009	—	21.2	34.8	36.3	5.6	2.0
2010	—	22.5	29.9	39.3	5.7	2.7
2011	—	22.9	27.6	42.0	4.8	2.7
2012	—	21.3	19.5	45.3	9.3	4.6
2013	—	24.0	20.5	41.5	9.0	4.9
2014	—	23.7	20.4	42.8	8.2	4.8
2015	—	21.7	20.5	43.4	9.1	5.2

SOURCE: Own calculations.

a Rows may not always add up to 100 due to rounding.

In addition to the foregoing, Table 3.6 provides information on the distribution of the total amount of the countercyclical provision (in percentages) across the different risk categories. It can be seen that, due to the values taken by parameters α and β (see their values in the previous chapter) for the various risk categories (they increase as the risk of the category increases), and also to how the credit exposures are distributed across the various categories, as shown in Table 3.5 and Table 3.5.Bis, it is the homogeneous medium risk group that accounts for the largest proportion of the total volume of countercyclical provisions. Then come the medium-low risk and low risk categories, while the high risk category is the one that accounts for the smallest percentage of the total value of the countercyclical provision. The smaller volume and relative percentage of exposure in comparison with other categories offsets the higher values of the parameters α and β, which would otherwise require a higher relative proportion of the countercyclical provision for the exposures included in this category.

CREDIT EXPOSURE COVERAGE BY RISK CATEGORY (%) TABLE 3.7

Total deposit institutions

Year	Negligible risk	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
2000	–	0.0	0.2	0.3	0.5	0.7
2001	–	0.1	0.5	0.7	1.2	1.7
2002	–	0.2	0.6	0.9	1.5	2.3
2003	–	0.2	0.8	1.2	2.1	3.1
2004	–	0.3	1.0	1.5	2.5	3.8
2005	–	0.7	1.9	2.1	2.3	2.9
2006	–	0.7	1.8	2.1	2.3	2.9
2007	–	0.7	1.8	2.0	2.2	2.8
2008	–	0.5	1.4	1.6	1.9	2.1
2009	–	0.3	0.8	0.8	1.2	1.2
2010	–	0.2	0.5	0.6	1.0	1.0
2011	–	0.2	0.4	0.5	0.7	0.8
2012	–	0.1	0.2	0.3	0.3	0.8
2013	–	0.1	0.2	0.3	0.3	0.8
2014	–	0.1	0.2	0.3	0.4	0.8
2015	–	0.1	0.2	0.2	0.4	0.7

SOURCE: Own calculations.

Table 3.7 shows the coverage of exposures by the countercyclical provision for each risk category and, also, how such coverage has evolved over time. First, it can be seen that at the end of the boom (December 2007) the coverage by risk category was at its peak (or close to its peak), after which it began to decline, slowly in 2008, and much more steeply from 2009 onwards. Another interesting feature apparent in the table is that the coverage rises with the level of risk of the homogeneous categories into which the loan portfolio is classified.

Moreover, it can also be seen how, as the crisis gained momentum, the coverage of exposures across the various risk categories changed significantly. The release of the provision stock was the key element leading to ever lower coverage levels. Not even the reduction in bank indebtedness (deleveraging), which occurred during the crisis, was able to offset the fall in the provision stock and keep the coverage ratio constant.

In order to put the figures in Table 3.7 into perspective, it is important to realise, that, for example in December 2007, according to the information contained in Table 3.1, when the countercyclical provisions were at their peak, the coverage of exposures by countercyclical provisions was 1.5%. This coverage ranged from 0.7% in the low-risk category to 2.8% in the high risk category, increasing with the risk associated with each category, i.e. in line with their risk profiles. Conversely, when the provision stock had been practically exhausted, during the final periods of existence of the countercyclical provision, the coverage percentages stood at around 0.25%, i.e. very close to their historical lows.

3.6 Coverage of losses by means of the countercyclical provision stock

Finally, a very simple but very useful and informative exercise may be carried out by comparing the maximum amount of the countercyclical provision stock set aside for each risk category, and the losses suffered in such categories during the crisis. These losses are approximated by means of the specific provisions made to cover non-performing loans, i.e. by analysing the ex-post materialisation of credit risk in each risk category (via specific provisioning).

The exercise performed compares the cumulative flow of specific provisions made during the period 2008-2013 (theoretical period of crisis in the Spanish economy), with the maximum amount of countercyclical provision accumulated by the banks in each risk category during the boom. The result of this comparison is presented in Table 3.8.

This comparison exercise is, perhaps, the best approximation of an assessment of the capacity of the countercyclical provision to serve as a countercyclical tool for accumulating reserves during the upswing for their subsequent use in the downswing, in an attempt to avoid, or at least cushion, the negative effects of the credit cycle. The exercise presented is a comparison between the total losses in each risk category during the recent crisis and the amount of the countercyclical provisions accumulated from their creation in 2000 and over the boom in the Spanish economy in the first decade of this century.

The assumption underlying this exercise is that the impact of the non-performing loans arising from the crisis and materialising in the form of specific provisions is complete and therefore that all the losses resulting from the crisis have fully materialised and may reasonably be measured by means of the volume of specific provisions made during the period considered. In support of this hypothesis it should be noted that the non-performing loans ratio of Spanish deposit institutions peaked precisely in December 2013. It should also be noted that this exercise extends by one year (to 2013) the one performed in Trucharte and Saurina (2013)

which, as mentioned above, is the basis of the document sent to the European authorities to comply with Measure 22 of the Memorandum of Understanding. As is to be expected, including an additional year in the exercise leads to a somewhat lower coverage of losses.

In this respect, the exercise presented could be biased in two directions. On one hand it may be underestimating the losses that arose during the crisis period if all provisioning requirements arising from the crisis were not accounted for by 2013. In that case, the flow of losses to be considered should still increase. On the other hand, it may be overestimating losses as a result of a failure to consider recoveries that may have been made since 2013 as a result of enforcement, foreclosure and subsequent sale of the collateral protecting assets impaired during the crisis period or of final repayments that borrowers may have made.

It should be noted that the effect of existing collateral or guarantees may be particularly significant in the low and medium-low risk categories (mortgage loans) and, to a lesser extent, in the medium risk category (corporate loans), given the lower level of collateralisation of loans classified in these risk groups.

Having made these caveats, it can be seen in Table 3.8 (first row of figures of this table) that the cumulative flow of specific provisions for the loan portfolio over the period 2008-2013 exceeded €212 billion (in the case of the medium risk category, the volume of losses estimated for the period 2008-2013, approximated by the volume of specific provisions made for this type of loan, was €83,284 million). Bearing in mind that the countercyclical provision stock peaked at almost €26 billion (second row of Table 3.8), the potential coverage with the countercyclical provision stock of the losses estimated in terms of the specific provisions set aside for the whole loan portfolio during the period 2008-2013 was 12.2% (third row of Table 3.8).[7]

Given the foregoing, the extent to which the specific provisions set aside (as a consequence of credit exposure impairment) for the different risk categories in the period considered were covered by the countercyclical provision may be appreciated.

For example, considering the medium-low risk category (principally mortgage loans to households for house purchase), the countercyclical provision established reached a cover-

7 Trucharte and Saurina (2013) present the equivalent of Table 3.8 separately for banks, former savings banks and credit cooperatives in Tables 16, 24 and 32. These tables show (although it should be noted, as mentioned above, that the exercise they are based on covers one year less) that the coverage of losses in the case of banks and credit cooperatives was substantially higher than in that of the former savings banks (the coverage for the former was around 17% while for the latter it was 11%).

APPROXIMATION OF THE COVERAGE OF LOSSES BY MEANS OF THE COUNTERCYCLICAL PROVISION STOCK ACCUMULATED

TABLE 3.8

Total deposit institutions

Specific provisions (losses) accumulated in the period 2008-13 (EUR millions)

Total portfolio	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk	Negligible risk
212,165	37,557	53,251	83,284	24,202	7,077	6,794

Maximum countercyclical provision stock accumulated by risk category (EUR millions)

Total portfolio	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
25,837	4,194	9,448	10,137	1,387	515

Coverage of losses arising from non-performing exposures by countercyclical provisions by risk category (%)

Total portfolio	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk
12.2	11.2	17.7	12.2	5.7	7.3

Specific provisions accumulated in the period 2008-13 as a proportion of credit exposures (%)

Total portfolio	Low risk	Medium-low risk	Medium risk	Medium-high risk	High risk	Negligible risk
11.2	6.9	27.0	26.0	34.1	54.1	0.9

SOURCE: Own calculations.

age of more than 11.2% (third row of table 3.8) of the actual losses recorded in this category, approximated by the specific provisions made in the period 2008-2013. By contrast, in the medium-high risk group (consumer credit), the coverage reached was only 5.7%.

It is also of interest to analyze the specific provisions accumulated during the period as a percentage of credit exposure (in the case of the total portfolio, this percentage, which is considered to be the percentage of realised losses, is 11.2% (fourth row of Table 3.8)) and to analyse this percentage for the various risk categories, comparing it with the implicit risk assigned a priori to each category.

The perception of the risk inherent in each risk category at the time the countercyclical provision was designed is clearly justified by the specific provisions made (losses incurred) during the recent crisis period. Thus, while for the low risk category the loss realised is 6.9%, in the case of the highest risk category it is 54.1% (see Table 3.8 again). That is to say, the catego-

risation by risk that was made a priori at the time of design of the statistical provision has subsequently corresponded to the ex-post realised risk, based on realised losses, with a minor discrepancy between medium-low and medium risk.

Finally, as regards comparison of the countercyclical provision with what is considered to be its successor tool, i.e. the Basel 3 countercyclical capital buffer, with an upper limit set at 2.5% of risk-weighted assets, the amount of the countercyclical provision at the time of peak provisioning (around 10 years ago) was half what the maximum amount of this new countercyclical capital buffer requirement would have been.

That is to say, the countercyclical provision at its peak amounted to 1.3% of credit risk-weighted assets (1.2% of total risk-weighted assets), which covered 12.2% of the losses generated during the recession in Spain.

In view of the above numbers, it may well be considered, given the (unexpected) magnitude of the crisis, that a larger provision stock would have been very useful to cover the losses incurred and would have greatly reduced the amount of public funds that needed to be injected into the Spanish financial system during its restructuring and recapitalisation. Chapter 1 set out in great detail the difficulties faced by the countercyclical provision of the Banco de España when it was established in 2000 and when IAS came into force in 2005, in addition to the outright opposition of Spanish deposit institutions, which saw a significant chunk of their profits taken away by the countercyclical provisions at a time when no other regulator/supervisor in the world was doing this. Furthermore, the countercyclical provisions were originally calibrated on the basis of the 1993 recession (the worst for 30 years at the time), which was dwarfed in magnitude by the 2009 and 2012-13 recessions (double-dip recession).

In any case, it is important to remember that the existence of countercyclical provisions partially alleviated the need for additional capital at Spanish institutions. For example, the countercyclical provisions of those institutions that were recapitalised with public funds reached €7 billion in the most acute phase of the credit cycle, so it can be argued that their recapitalisation needs were reduced by the same amount, a far from negligible contribution to saving public funds to protect the depositors of such institutions and the stability of the Spanish banking system.

Epilogue

After having explained throughout this book the history and functioning of countercyclical provisioning and the main variables involved, it seems appropriate to offer readers an assessment. As mentioned in the introduction, however, rather than marking the end point, this aims to be a spur to further reflection on this pioneering instrument that the Banco de España created over fifteen years ago. Indeed, even before its final disappearance, countercyclical provisioning has been reincarnated – with some modifications – in the form of the countercyclical capital buffer, one of the new macroprudential policy instruments currently being rolled out worldwide. And, in parallel, loan-loss provisions are soon due to incorporate forward-looking elements in their determination, as incurred losses are replaced by expected losses – one of the hallmarks of Spain's countercyclical provisions – as a guide when calculating loan loss provisions.

Usefulness of countercyclical provisions

When evaluating countercyclical provisions, the first question to ask is how useful they have been in the light of how lending has evolved in Spain over the last fifteen years and the credit risk assumed by the banking sector. This is a legitimate question given the strong growth in lending to the private sector by the Spanish banking industry between the creation of the euro and the outbreak of the crisis. Thus the stock of total lending to the private sector grew more than fourfold, with almost tenfold growth in the case of loans for construction and real estate development. And the question is, of course, legitimate because the bankruptcy (and consequent bail-out to avoid yet worse externalities) of almost 20% of the Spanish banking system suggests that the latent risk of the accumulated stock of credit was particularly high.

If anyone thought that countercyclical provisioning ought to mitigate credit growth by obliging institutions to recognise an additional cost on each loan, and should provide a sufficient buffer to absorb the latent risks, the superficial conclusion would be that these provisions did not achieve any of these goals. However, closer analysis of events confirms that countercyclical provisions have been more useful than could be deduced from reasoning such as the foregoing.

It is worth recalling that, as explained in Chapter 1, countercyclical provisions were calibrated using the credit cycle prior to Spain's adoption of the euro. This cycle included the 1993 recession, with a drop in GDP of just over 1%. During discussions with the banking industry, which flatly rejected statistical provisions, countercyclical provisions were finally calibrated at half of the initial proposal. With the advent of IAS, the parameters were adjusted so that the system would continue to produce a flow of provisions similar to that in the recent past and almost none of the accumulated stock was released (see the quantitative analysis in Chapter 3). Even so, it is worth noting that in the years of fastest credit expansion, countercyclical provisions deducted between 15% and 20% from lenders' operating income. This deduction was unique to Spanish institutions as no other European countries introduced countercyclical provisions.

The cycle of credit growth following the introduction of the euro was more intense than in previous years, and the 2009 recession was also deeper, with Spain's GDP falling by more than 3%. During the first eight years of euro membership, prices of real estate assets rose by 250%, while nominal GDP grew by just 50%.[1] Moreover, the crisis in Spain coincided with an international economic and financial crisis at a time when the opening up of the Spanish economy to external financing had made rapid credit growth possible, with credit growing to a volume that far exceeded anything reached in the past. The change in Spain's economic and credit growth trends was unprecedented. The same happened to banks' non-performing assets, which followed in the wake of the powerful economic recession, and liquidity stress, resulting from the high mobility of bank financing in international markets. Countercyclical provisions were not calibrated for tail risks of this kind (or for upward or downward shocks of this magnitude), but for risks in line with the historical pattern of Spain's credit cycle.

The more imbalanced the credit expansion, the greater the future defaults that emerge when the cycle is exhausted and the economy slows and then goes into recession. This phenomenon has been observed time and again worldwide. With the benefit of hindsight the underlying causes of this problematic credit expansion can be said to be numerous: disaster myopia and herding behaviour among bank managers; intense competition between institutions; abundant funding, partly thanks to securitisations bought by foreign investors at very low or even negative real interest rates; benefits to bank managers associated with empire-building; overconfidence; confusion between growing credit risk (an ex ante concept) and the prolonged absence of defaults (the ex post manifestation); a disregard for lending standards, all wrapped up in a collective perception, with only rare exceptions, that this time would be

1 See Estrada and Saurina (2016) for a detailed discussion of this issue and its implications.

different and that there had been a structural change in the economy that justified almost everything.

Again, in the light of the economic and financial context described in the previous paragraph, associated with specific patterns of behaviour by agents (bankers, lenders, borrowers, companies, households, supervisors, central banks, etc.) who had no memory of the previous credit cycle, or whose memory had been erased by the prevailing excess of optimism and lack of prudence, it should come as no surprise that a modest macroprudential instrument, calibrated with difficulty, implemented in the face of opposition from bankers and accountants, and lacking the backing of peer countries' supervisors, was unable either to prevent initial strong credit growth or the subsequent bankruptcy of a significant portion of the Spanish banking industry.

That said, the Spanish banking system accumulated dynamic provisions of almost €26 billion, and there is nothing in the context described in the two preceding paragraphs to lead one to suppose that the banks would have set aside this amount as capital to confront the crisis voluntarily. Therefore, countercyclical provisions at some banks no doubt helped avoid their bankruptcy or recapitalisation. For other banks, these provisions were an extra resource, making them more robust. And in the case of the bailed-out banks, the €7 billion of accumulated countercyclical provisions were a saving of the same amount of taxpayers' money. Bearing in mind the extremely adverse conditions Spanish institutions faced during the crisis, the conclusion is that countercyclical provisions help provided positive, although limited, support to banks' ability to weather the effects of the crisis.[2]

Additionally, a necessarily more qualitative and subjective assessment of the usefulness of Spain's countercyclical provisions needs to consider their contribution to the post-crisis international regulatory debate, which was discussed in more depth in Chapter 1. There is unanimity that the countercyclical capital buffer announced by the Basel Committee on Banking Supervision (BCBS) in late 2011 and adopted by EU and Spanish law, was directly inspired by Spain's countercyclical provisions, although expressed in terms of capital rather than provisions. Similarly, although with a somewhat longer delay due to international accounting doctrine's resistance to change, the evolution of loan-loss provisions from incurred loss to expected loss includes forward-looking elements inherent in our countercyclical provisions, but without replicating them entirely. Countercyclical regulatory capital – required to

2 Fillat and Montoriol-Garriga (2010) performed a hypothetical simulation of a system of countercyclical provisions like Spain's in the United States, showing that it would have made it possible to avoid half of the funds used to recapitalise US banks, but that given the scale of banking problems, the buffer of provisions would have been completely exhausted in the first quarter of 2009.

be set aside in the expansionary phase and available to be released in the recessionary phase – and the new way in which loan-loss provisions are calculated also form part of the legacy of Spain's countercyclical provisions and also need to be taken into account when assessing their usefulness. This is all combined with the intangible value represented by the fact that the Banco de España, and ultimately Spain, has been able to contribute its practical experience and expertise to help configure the new regulatory framework for the international financial system.

The need for microprudential supervision

The second point of reflection relates to the fact that for the Banco de España and the ECB, given their macroprudential competencies, the existence of countercyclical regulatory instruments (such as the provisions in Spain over the past 15 years, or henceforth the countercyclical capital buffer, which came into effect in January 2016), is no substitute for microprudential supervision. The Spanish case highlights the differences in each institution's loan-approval policy and the consequent credit standards that were applied when granting loans. The prudence of managers varied, and risk premia, collateral value appraisals, lending policy guidelines, and in short, credit-risk management all varied in terms of risk. Microprudential supervision needs to be able to distinguish between managers and correct riskier behaviours that jeopardise an institution's future, and by contagion, the rest of the banking system and the economy.

The foregoing means the need for a pro-active microprudential supervision that goes beyond identifying incorrectly classified assets and confirming that non-performing assets are correctly provisioned. During expansionary phases defaults are minimal, economic activity is buoyant and practically all borrowers can meet their commitments. However, weaknesses may lie hidden in loan portfolios in the form of loans granted to financially insecure households and firms, which may experience difficulties with the change in economic cycle; loans granted against overvalued collateral, with appraisals skewed upwards; inadequate risk premia; excessive financing, of 100% or more, of the value of the real-estate collateral, or financing of a substantial part or all of the value of land a developer intends to buy.[3]

The above list is just a sample of the elements that need to be included in microprudential supervision work during the expansionary phase. However, something else is needed. The necessary backward-looking supervision should be supplemented with forward-looking

3 This is what Pérez Ramírez (2011) catalogues as bad banking practice. Conversely, an example of good banking practice, over 150 years old, is found in the last reference by Pérez Ramírez (2016).

supervision, so as to ask what might happen to a loan whose collateral is overvalued, granted at 100% of the value of the asset acquired or investment made, at interest rates that do not cover the average risk premium over the cycle, or if the economy slows or goes into recession. In other words, it is necessary to ask about the expected loss on the loan portfolio, as a function of homogeneous risk characteristics, and at least, set aside adequate provisions. This is a path that was opened up by Spain's statistical and countercyclical provisions over fifteen years ago. And today stress tests of loan portfolios are on that same path, seeking to determine how well institutions can withstand various scenarios and their negative impact on credit risk and on the income statement.[4]

The correct classification of assets, appropriate provisioning and close and intrusive monitoring of institutions' credit policies are essential factors in preserving the stability of the banking system, bank by bank, and in reducing systemic risk. These elements complement banks' capital requirements. Increasingly, possibly because of the importance of the BCBS in the international supervisory context, one gets the impression that microprudential supervisors are turning capital into a sufficient indicator of bank solvency. If this were true, all a bank's weaknesses could be solved by demanding more regulatory capital.

Although capital is a cornerstone of banking regulation and supervision, it cannot be the only element. What is more, the next recession may bring nasty surprises if everything is entrusted to capital, and no attention is paid to lending policies. Capital is necessary, but must be backed up with adequate provisions, intrusive supervision of credit standards and forward-looking instruments, including stress tests. Attention also needs to be paid to manager's incentives, banks' business model and corporate governance, as these are three key elements in understanding the recent Spanish banking crisis. The combination of all the previous elements, which are nothing but the result of different supervisory practices, within the new SSM supervisory framework, is a factor that may contribute to reinforcing the stability of the banking system of each euro area country.

Measuring credit risk

A third point of reflection on countercyclical provisions is their contribution to better measurement of credit risk. As has been repeated several times in this book, credit risk is an ex ante concept. Risk arises when the loan is granted, not when default occurs. Risk

4 The Banco de España has developed a stress-testing methodology called FLESB. See Banco de España, *Financial Stability Report,* November 2013, for a brief description of the methodology, and Banco de España, *Financial Stability Report,* November 2016, for a recent practical application of the methodology.

therefore has to be provisioned, with a view to covering the expected loss, as soon as the loan is granted. Moreover, the risk on transactions varies over the course of the cycle, and is greater in the case of lending during expansionary phases, thus justifying the countercyclical nature of provisions. Conversely, incurred losses, currently the dominant concept in the calculation of provisions, only require provisions when there is evidence of impairment, which can occur quite late in the cycle when it is highly likely that recession is already apparent. This makes loan-loss provisions highly procyclical, rising just as the bank's ability to set them aside becomes more constrained (by lower profits and increasing difficulty in obtaining capital), which can end up damaging credit (which contracts more than is desirable to meet capital requirements) and deepening the recession. Accounting doctrine based on the incurred loss concept can give rise to serious macroeconomic problems, as well as being inconsistent with empirical evidence on credit risk and how it changes over the course of the cycle.

Only after much international pressure from the G20 and the Financial Stability Board (FSB), and much later than any other international regulator, have accounting regulatory bodies begun to move, opening up their doctrine to expected loss. In principle the changes will come into force in 2018, with the application of IFRS 9. This is a positive development, as it should broadly align the accounting measurement of credit risk with that used by banking regulators to calculate capital requirements, while also incorporating forward-looking elements. At the moment Spain's countercyclical provisions disappear, international accounting standards will at last incorporate one of the defining features of the Spanish provisioning standards. This change comes too late for the last credit cycle and two decades after the pioneering reflections of BIS economists, but we hope it will be of use in cycles to come and prevent a repetition of the credit booms and busts that have proven so harmful for the economies and societies they occur in.

Despite the big step forward in accounting doctrine, alluded to in the previous paragraph, this change brings a potential danger that needs to be watched carefully. Given that provisions depend on expected loss, which is measured with models used to calculate regulatory capital (based on PD and LGD), it is very likely that the procyclicality of the provisions will not be entirely eliminated, although it ought to be less than when provisions are based on incurred losses. This may be the case if the probability of default, non-performing loan recovery rate and collateral valuations are procyclical, which is difficult to refute empirically.[5] Additionally, there are concerns about relying on banks' own models for calculating expected losses, given

5 For the case of Spain see Repullo et al. (2010).

the incentives bank managers may in some instances have to adjust them to understate the provisions or capital necessary.[6]

Ironically, just as countercyclical provisions are about to disappear in Spain, they could again be useful, at least as a guide to evaluating banks' calculations using their own models and the extent to which these models anticipate future losses. Perhaps this is further evidence of the lack of understanding of this instrument. The empirical evidence on this point is robust and persistent: loans granted during expansionary phases are higher risk, entailing the need for higher provisions, which therefore should behave countercyclically.

Countercyclical provisions and countercyclical capital: substitutes or complements?

Following the reasoning of the preceding section, and now that a countercyclical capital buffer is already in operation and that provisions are going to be based on the expected loss in the not too distant future, a highly significant question is raised here: whether countercyclical provisions and countercyclical capital are substitutes or complements.

The origin and determinants of this capital buffer were set out in Chapter 1, namely correcting the procyclicality inherent in capital requirements that depend on trends in PD, LGD and EAD, which are three basically procyclical variables, unless adjustments are made to adapt them to their intended use. Will a maximum countercyclical capital buffer of 2.5% be sufficient to correct this procyclicality? Some people doubt it will, if the next financial cycle is very pronounced. Additionally, for some banks this requirement may account for less than 20% of the total (minimum of 4.5% plus a capital conservation buffer of 2.5%, plus requirements for systemic institutions that can be up to 2.5%, plus pillar 2 supervisory requirements, plus systemic capital buffer, etc.).

The expected loss from the accounting perspective will also be based on a PD and an LGD that are intrinsically procyclical, although less so than incurred losses. This is scant consolation if the deterioration in the economic environment is abrupt and steep, as it was, for example, in Spain in the second half of 2008, such that the jump in provisioning requirements can be sharp, if they rise suddenly from stage 1 to stage 2 or to stage 3.[7] That is to say, provisions based on expected loss may still be procyclical.

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6 The evidence presented in the May 2015 *Financial Stability Report* (Banco de España (2015)), which is explained in more detail in Trucharte et al. (2015), points in this direction, as mentioned above in footnote 43 in Chapter 1.

7 According to the impairment situation of a loan, the international accounting regulator (IASB) recognises three stages into which a credit operation may be classified. As commented in Chapter 1, stage 1 refers to performing loans; stage 2 includes those operations for which credit risk increases significantly, whereas stage 3 contains credit-impaired operations.

Against this background it may make sense to add an explicit countercyclical component to provisions based on expected losses, while still acknowledging that the change in the accounting orthodoxy has been highly positive. In other words, it may make sense to continue developing the concept of provisions based on expected losses by adding an explicitly countercyclical component, for example, bringing back dynamic provisioning. Obviously, for a country like Spain any change of this kind would have to be coordinated at the international level, as harmonisation and standardisation within the SSM leave little leeway for national supervisors and regulators. As well as the desire to reduce the potential procyclicality of the provisions based on expected losses calculated with each bank's internal methodologies, there is the preceding reflection on the possible dilution of the countercyclical capital component, despite the clear need for it.

There is an additional conceptual argument for defending this complementarity and, therefore, the possible coexistence of both types of prudential instrument: provisions cover expected losses and capital covers unexpected losses. Therefore, they are two essentially different instruments with different regulatory objectives, with a similar underlying procyclicality (which may become significant). Each is therefore susceptible to a simultaneous but different countercyclical correction. In other words, it is perfectly conceivable to have countercyclical provisions complementing the countercyclical capital buffer. This would strengthen banks' solvency in two ways, in terms of both expected losses and unexpected losses. This proposal is far from being achieved in Europe, and in general, in countries with very mature banking systems. However, it may not be ruled out in countries that already have countercyclical provisions and are on the way to adopting Basel 3 and its countercyclical capital buffer. These countries will be protecting their banking system, and therefore, their economy, from fluctuations in lending that cause financial instability and, in all likelihood, significant losses of welfare. Excessive conservatism on the part of the supervisor? Or an accurate reading of the last international banking crisis, the worst since the great depression in the 1930s?

At the very least the reflection above suggests the need to watch the cyclical development of new provisions based on expected losses and regulatory capital closely, so that a rapid change in the cycle does not catch bankers and authorities unawares again, with insufficient coverage for expected and unexpected losses.

Protecting financial stability through public policies

The final point for reflection concerns the need for an evaluation of the interconnection between the various different policies intended to safeguard financial stability. Is it possible

to control the credit cycle with countercyclical instruments alone? The answer probably depends on the magnitude of the cycle. With the benefit of hindsight, it is clear that in the Spanish case other instruments would have been needed, together with other policies to cope with the surge in credit that followed the adoption of the euro, but had in fact begun earlier.

Given the scale of the credit expansion, and the levels reached by countercyclical provisions in terms of their impact on banks' income statements, on top of which came the opposition of accounting regulators, other instruments could have been used. For example, selective capital requirements (aimed at covering real estate exposures) could have been set or quantitative limits applied to concentration risks in exposures to property developers. Quantitative limits were (and remain) an instrument that has gone out of use, perhaps as a result of a certain dogmatism in favour of price incentives. However, Spain's experience, where some banks' exposures to developers came to 30% of their total private sector loan portfolio and over half of all business lending, has put the spotlight back on the usefulness of quantitative limits.

In any event, it does not seem that additional regulatory capital or even quantitative limits on exposures to real estate developers would have been sufficient. The defaults that appeared with the onset of the recession were not spread evenly or randomly, but followed a predetermined pattern. They massively affected banks, portfolios and loans with the lowest lending standards, and the biggest excesses and weakest safeguards in loan approval and collateral appraisal.

Finally, given the scale of the macroeconomic imbalances that built up over the period, in terms of credit growth, debt levels (particularly external debt), and the housing market, it does not seem that the monetary policy applied in Spain was that which a central bank concerned about financial stability should have implemented. A simple exercise (Estrada and Saurina (2016)) based on the well-known Taylor rule (1993) shows that between the adoption of the euro and the Lehman Brothers crisis official interest rates in force in Spain were well below those that would have been set by the rule (in the range of 200 to 400 basis points too low). In contrast, the interest rates set by the ECB for the euro area as a whole, rather than for individual countries, with the aim of controlling the area's inflation rate, were aligned with the Taylor rule over most of the period.

This expansionary monetary policy should have been offset by a more restrictive fiscal policy than was in fact applied, as although there were several years of fiscal surplus, structural expenditure grew more rapidly than structural income (cyclically adjusted). Specifically

targeted instruments (such as taxes on land and housing sales, and the elimination much earlier of households' tax relief on home purchases) could also have been implemented.

The lack of economic models where the real and financial variables, along with bank and credit risk, interact, also hindered an accurate diagnosis of the problem, which might have made it possible to launch an overall reflection on the policies needed, from very different angles, to avoid such a pronounced credit cycle in the expansionary phase, which led to the worst economic crisis since the civil war.

The discussion in the preceding paragraphs highlights the value of countercyclical macroprudential instruments, particularly for monetary union member countries.[8] Instruments such as the countercyclical capital buffer, the tightening of risk-weighted assets in the real estate sector, the systemic risk buffer, the limits on risk concentration, including the loan-to-value (LTV) ratio (the amount of a loan as a percentage of the value of the collateral pledged), debt-to-income (DTI) ratio (debt as a percentage of income), used as limits on the value of the residential property the bank can finance or the debt an individual can take on, are appropriate to overcome moderate financial imbalances between monetary union member countries.

However, Spain's experience also suggests the need for caution. If the imbalances between countries are substantial and persistent, monetary policy needs to help ensure medium-term financial stability, through its impact on the credit cycle, by moderating the expansion to avoid future problems. Thus the interest rate may be regarded as the macroprudential instrument of last resort, basic but capable of halting a credit expansion that could lead to financial instability if it were to continue.[9]

Is this vision fully shared throughout the euro area? Is there an appropriate analytical framework to address these problems? Are governments in agreement regarding the need to support these measures with fiscal policy that is consistent in both its general stance and the specific instruments applied? The euro area should be better prepared for the next credit cycle, which will inevitably consist of an expansion followed by a contraction. What can and must be controlled is the amplitude of this cycle, with all the instruments available, free of

8 Restoy (2015) offers some pertinent thoughts on the challenges of macroprudential policy implementation, in particular in a monetary union.

9 For example, papers by Jeremy Stein, a former governor of the US Federal Reserve, support this position. Stein (2012), in a paper whose title is a clear and direct declaration of intentions, and Stein (2013), highlights the substantial shift in central banks' thinking when addressing monetary policy and its relationship to financial stability. In this latter paper, Stein summarises in masterly form the importance of monetary policy, compared to what supervision and regulation can do to safeguard financial stability "[…] while monetary policy may not be quite the right tool for the job, it has one important advantage-namely that it gets in all of the cracks".

preconceptions in an open and frank discussion of the relative weight that should be given to each of them.

Finally, we cannot end this book without paying well deserved tribute to those directly responsible for implementing countercyclical provisions and keeping them going, while making the changes they needed to survive. It is clear that the better grounded a regulatory policy mechanism, both theoretically and empirically, the easier it is to justify the decision to implement it, convincing the agents involved of the need for it and its usefulness. Attention and resources should therefore be devoted to analysing regulatory instruments, including their macroprudential dimension,[10] without ignoring other public policies (monetary, fiscal, microprudential, structural, etc.). However, it is also unusual for all these arguments to be sufficient to take the decision. In particular, if the instrument or measure is controversial, with a negative short-term impact on a small and powerful interest group, which will have no qualms about forcefully opposing it, while the benefits are diffuse and only apparent in the medium term, and accrue to society as a whole rather than to a small group.

A good dose of courage and determination from the top management of of the Banco de España was needed, first, to put the invention of countercyclical provisions into practice, and then, to maintain them with the arrival of IAS. Although there are no counterfactuals in economics,[11] it is highly probable that the existence of countercyclical provisions helped moderate the credit cycle somewhat in the expansionary phase and, above all, make the credit crunch substantially milder in the first recession in 2009, with the consequent smaller economic impact in terms of jobs, business closures, and the downturn in activity, together with the smaller need for recapitalisation and write-downs in 2012 when the resolution of the Spanish banking crisis began in earnest. This outcome was due to the courage, pressure and undeniable determination of a small group of people who believed in countercyclical provisions and gave them their backing through thick and thin.

The fact that countercyclical provisions were insufficient to avoid a severe banking and economic crisis, with highly negative and long-lasting social impacts, should be an inducement to continue working on the design and calibration of new macroprudential instruments, and on other public policies to control the credit cycle better and to soften its impact, safeguarding the stability of the financial system and contributing to social well-being. Countercyclical provisions, an exciting intellectual and regulatory adventure, were a pioneering step in that direction.

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10 Mencía and Saurina (2016) explain the analytical framework put in place by the Banco de España to evaluate the stance of macroprudential policy.

11 A rigorous analysis of this issue is given in Jiménez et al. (2016).

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“I’ve seen things you people wouldn’t believe. Attack ships on fire off the shoulder of Orion. I watched c-beams glitter in the dark near the Tannhäuser Gate. All those moments will be lost in time, like tears in rain. Time to die.”

Blade Runner

Ridley Scott, 1982